AN ABSTRACT OF

The Croonian Lectures

ON

THE CHEMICAL SIDE OF NERVOUS ACTIVITY.

Delivered before the Royal College of Physicians of London

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LECTURE I.

Delivered on June 11th, 1901.

AFTER thanking the College for the honour of the lectureship Dr. Halliburton alluded to the large number of times the nervous system had been selected as the subject of the Croonian Lectures, either from the histological, experimental, or clinical side. The chemical side had, however, been in the main neglected. Researches on the brain, the organ of the mind, had been most fruitful in yielding results which were useful to those who treated disease, but they had not unearthed the ultimate meaning of mental processes. The scalpel and the microscope had not been successful in discovering the mind; one would also not expect to find it in the test-tubes of the chemist. Nevertheless, there were a large number of interesting chemical facts in connexion with the nervous system which were daily becoming more numerous and were not devoid of pathological importance. These the lecturer wished to lay before the College, and he stated that he intended especially to dwell upon those researches which had been done either by himself or by workers in his laboratory during the last few years. He did so, not because he considered them to be of greater importance than work which had issued from other laboratories, but because he was limited by time, and further, because he understood that one object of the Croonian Lectureship was to give an investigator the opportunity of presenting his own original work in a connected and orderly way before the medical public. He expressed his thanks to those who had worked with him, particularly to Dr. F. W. Mott and Dr. T. G. Brodie. Much of what he had to say would supplement and extend the chemical work which Dr. Mott laid before the College in his Croonian Lectures last year. The subject of his first lecture would be:—

THE GENERAL COMPOSITION OF NERVOUS STRUCTURES.

Dr. Halliburton first dwelt on the large quantity of water in these tissues; this is highest in the grey matter (from 80 to 90 per cent.), less in white matter (70 per cent.), and least in nerves (from 61 to 65 per cent.). [These facts were illustrated by a number of analytical tables.]

The solid materials of nervous tissues are extremely numerous. The most important and most abundant, and those of which we have most accurate knowledge, are the proteids and the phosphorised fats. The percentage of proteids is especially high. [Here the lecturer had recourse to analytical tables compiled from his own observations.] In grey matter the amount of proteid comprises over 50 per cent. of the solids; this is what would be expected from the fact that protoplasmic structures are most abundant there. In any nervous structure the amount of grey matter, of water, and of proteid vary directly the one with the others.

The proteids present are three in number; the most abundant is nucleo-proteid (containing 0·5 per cent. of phosphorus); there is not much of this, however, in the white matter. The other two proteids are globulins, one of which coagulates at 47° C. and the other at 70° C. The neuro-globulin which coagulates at the lower temperature is analogous to the cell-globulin obtained from most protoplasmic structures. In view of hyperpyrexia, a subject which the lecturer intended to discuss at greater length later, particular attention was drawn to the low temperature at which neuro-globulin is converted into coagulated proteid.

The other important substance in the nerve-tissues is protagon, the phosphorised fat. On decomposition it yields two substances: one of these is lecithin, the other cerebrin or cerebrins. The cerebrins are sometimes called cerebrosides; they are nitrogenous glucosides, the sugar obtainable having been identified as galactose. The composition of lecithin was described in some detail, but the most important fact in relation to it is its difference from an ordinary fat. An ordinary neutral fat on hydrolysis yields a fatty acid and glycerine. Lecithin on hydrolysis yields not only fatty acid and glycerine, but phosphoric acid and choline in addition. The phosphoric acid contains all the phosphorus of the original lecithin and the choline all its nitrogen. Choline is chemically an alkaloid — trimethyl-oxyethyl-ammonium hydroxide. It is somewhat toxic and its importance lies in the fact that it is a substance which can be easily recognised by both chemical and physiological tests, and its presence indicates that lecithin, and therefore nervous tissues, have undergone disintegration.

The lecture concluded with a brief account of the cerebro-spinal fluid. This fluid differs from ordinary lymph in many particulars, but it apparently plays the part of the lymph of the central nervous system. It is characterised by its low specific gravity, its clear watery character, its paucity in proteid, and the presence in it of an unknown reducing substance which is not sugar. A number of analyses were given, and special attention was directed to Dr. StClair Thomson's well-known case in which the fluid dripped from a patient's nostril and which furnished a unique opportunity where the absolutely normal fluid could be examined. The observations and experiments made with this fluid by Dr. Thomson in conjunction with Dr. Leonard Hill and the lecturer were given at some length. The importance of cerebro-spinal fluid from the pathological standpoint was that here the products of brain katabolism would naturally be looked for. The normal fluid, for instance, contains the merest traces of choline and of proteid, but in pathological conditions in which the disintegrative side of metabolism preponderates over the assimilative, these materials, the chemical evidence of nervous breakdown, are much increased in quantity.

LECTURE II.

Delivered on June 13th, 1901.

METABOLISM IN NERVOUS TISSUES.

THE evidence that nervous material is during activity in that state of unstable equilibrium which is designated by the term "metabolism" is rather circumstantial than direct. Nervous action stands apart from the action of most other tissues in the extraordinary economy of wear and tear which is noticeable. This is accounted for either by the fact that a very small amount of chemical change is necessary for the manifestation of activity or else that the anabolic side of metabolic phenomena is very evenly and rapidly balanced against the katabolic or disintegrative side. The signs of action which do exist are to be found mainly at the beginnings and endings of the fibres—i.e., the cells in brain and cord and the end-organs in muscle and other peripheral structures—and hardly at all in the more passive transmitters of energy, the fibres themselves. The statement is usually made that nerve-fibres are not capable of exhaustion.

These facts coincide with the arrangements of the vascular supply; the centres are richly supplied with blood-vessels, but in a nerve these are comparatively insignificant. The necessity for an abundant supply of oxygen to the brain is seen from the rapidly fatal effects of cerebral anæmia, and Dr. L. Hill's experiments with methylene blue strikingly illustrate how oxygen is used up on cerebral activity. If an anæsthetised animal receives methylene blue by intravenous injection, any part of the brain thrown into action by electrical stimulation loses its blue tint, due to the formation of a colourless reduction product.

A number of observations on the reaction of nervous tissues were then described by Dr. Halliburton. The normal reaction is alkaline; at death it becomes acid, but on activity there is little or no evidence that acid is formed in nerve-fibres. This was carefully tested in some experiments performed in conjunction with Dr. Brodie on non-medullated nerves. These nerves were selected, as the possibly masking effect of a large mass of myelin would then be absent. As a result of excessive stimulation for many hours the nerves in question never became acid.

In nerve centres there is, however, a formation of acid products, especially where nerve-cells were situated. The lecturer next described Dr. A. Waller's experiments which have led him to the conclusion that carbonic acid is produced during the activity of nerve, and he discussed his interesting theory that the medullary sheath and axis cylinder are related nutritionally, so that the absence of fatigue is due to the re-integrating action of the medullary sheath. This view was supported by the experiments of Miss Sowton on non-medullated nerves in which the gradual disappearance of the electrical response on repeated stimulation indicates that fatigue could be demonstrated in nerves which did not possess a medullary sheath. As some doubt had been expressed in regard to the trustworthiness of the galvanometric response the lecturer had, in conjunction with Dr. Brodie, investigated the same problem by another method. The non-medullated nerves selected were those of the spleen, and the muscular contraction of the spleen was recorded plethysmographically. The general plan of the experiments resembled that adopted by Bowditch and others in the investigation of fatigue in medullated nerves; curare was not applicable as a blocking agent and the constant current, even when weak, produced of itself so much depression, and this lasted so long, that it also was given up. The best block ultimately found was cold. The experiments showed that fatigue did not occur or could not be demonstrated in the splenic nerves. Dr. Halliburton then proceeded:

Evidence of fatigue products can be found in the central nervous system by examining cerebro-spinal fluid. The word "metabolism" is so often associated with the activity of the proteid constituents of protoplasm that one is apt sometimes to forget that other materials frequently exhibit a similar alternate or simultaneous series of anabolic and katabolic phases. In nervous structures this is particularly true for the complex phosphorised molecules of protagon. The trace of choline found in normal cerebro-spinal fluid represents the small balance on the wrong (katabolic) side of the account. Further, physiological saline solution, the most harmless of all reagents, will extract choline from perfectly fresh nervous tissues, especially from grey matter, the most active portion of nervous material. All observers do not at present agree with me that choline is the most important substance which goes into solution in such extracts, but all are agreed on its presence, which is the main point. It is also the only organic substance which, up to the present, has been satisfactorily identified. The fact that it is obtained by such simple means indicates that the protagon or lecithin from which it is derived is in a labile condition.

The importance of micro-chemical methods was next insisted on. The most useful of these are those associated with the names of Golgi and Nissl. Golgi's silver-chrome method is one that had led to important results. It was on this method that the adherents of the neuron theory mainly relied. Much doubt had, however, been expressed as to its absolute trustworthiness, and certainly it was not nearly so sensitive and delicate a method as that of Nissl for demonstrating changes in nerve cells. The significance of Nissl's granules which were demonstrable by methylene blue formed the subject of the next section of the lecture. Though it is doubtful whether chromatolysis occurred during ordinary fatigue, there is no doubt that excessive activity and numerous other pathological processes are characterised by the disintegration and disappearance of Nissl's granules. Chemically the granules are composed of nucleo-proteid, and no doubt their presence is an indication of a store of energy-producing substance. The lecture concluded by a reference to sleep, nature's great restorer for exhausted "nerves." Dr. Halliburton said:

Chemical theories which explain sleep by the production of soporific substances—leucomaines, reducing substances, &c.—during waking hours depend upon the slenderest of evidence which will not stand rigid inquiry. Loeb's recent researches on rhythmical action in contractile tissues have shown that the stimulus to alternate periods of rest and action consists of certain ions. In order that rhythmic action may be maintained a nicely balanced admixture of ions must be present. It is just within the bounds of possibility that nerve-cells may be brought within the same category and that the phenomenon of alternate periods of wakefulness and sleep may in the future be found explicable by the comparatively simple action of inorganic substances or of their constituent ions.

Some observers have sought for the meaning of sleep by examining the brains of animals which have been more or less deeply narcotised. The moniliform swellings which can then be seen on the dendrites have been taken by Demoor and others to be evidence that the dendrons have retracted, and so connexions with other dendrons are interrupted. Lugaro, on the other hand, has failed to find these varicosities and has formulated another bio-physical theory of sleep which is the exact contrary of Demoor's. He maintains that the interlacing of dendrites is much more intimate during sleep than during consciousness, and he explains sleep by supposing that the definite and limited relationships between neurons no longer exists, and these are lost or rendered ineffective by the universality of the connecting paths. Such a divergence of views is easy to understand, for they depend upon observations made by a single method (Golgi's), and that not a very trustworthy one.

A more satisfactory investigation of the effect of anæsthetics on nerve-cells has been carried out by Dr. Hamilton Wright mainly in the physiological laboratory at King's College. The research is important because methods other than Golgi's, especially that of Nissl, have been employed as well. In rabbits and dogs the moniliform enlargements certainly are always seen. Lugaro failed to find them because the dogs he used were not anæsthetised for a sufficient length of time. Dogs are more resistant than rabbits to ether and chloroform, and changes in the nerve-cells are not noticeable until at least four hours' narcosis has been produced.

Owing to the chemical action of the drug on the cells the Nissl bodies have no longer an affinity for methylene blue and the cells consequently present what Wright calls a rarefied appearance; when this is pronounced the cells appear like skeletons of healthy cells. In extreme cases the cells look as though they had undergone a degenerative change and after eight or nine hours' anæsthesia in dogs even the nucleus and nucleolus lose their affinity for basic dyes. The change, however, is not a real degeneration and passes off soon after the disappearance of the drug from the circulation. Even after nine hours' deep anæsthesia there is not a cell which is permanently deformed; the branches no longer present varicosities and all the axis cylinders as tested by the Marchi method are healthy. The action of chloroform and ether is no doubt bio-chemical; the chemical action of the anæsthetic interferes with the normal metabolic activity of the cell-bodies and this produces effects on the branches of the cell. The moniliform enlargements seen during the temporary pseudo-degenerative effects produced by the drug are comparable to the similar swellings of the axis cylinder produced by hydration or some chemical change of that nature which occurs during the early stages of Wallerian degeneration. The enlargements, therefore, are not the primary cause of loss of consciousness, but are merely secondary results of changes in the cell-body.

Dogs and rabbits differ in their susceptibility to the influence of anæsthetics, and this corresponds to the readiness with which the histological changes just described are produced. The effects are probably the same in kind for all animals, man included, though they differ in degree. One should, however, be very chary in concluding that the artificial sleep of a deeply narcotised animal is any criterion of what occurs during normal sleep. The sleep of anæsthesia is a pathological condition due to the action of a poison; the drug reduces the chemico-vital activities of the cells, and unconsciousness is in a sense dependent on an increasing condition of exhaustion, which may culminate in death. The sleep of health, on the other hand, is not produced by a poison; it is rather the normal manifestation of one stage in the rhythmical activity of the nerve-cells, and though it may be preceded by fatigue or exhaustion it is accompanied by repair, the constructive side of metabolic action.

NOTIFICATION OF PULMONARY TUBERCULOSIS.—At the monthly meeting of the Teignmouth District Council held on June 3rd it was decided to draw the attention of the local medical men to the medical officer of health's suggestion that cases of pulmonary tuberculosis should be notified. The registrar of deaths was instructed to inform the medical officer of health of all deaths from tuberculosis.

STANDARDISATION OF CALMETTE'S ANTI-VENOMOUS SERUM WITH PURE COBRA VENOM:

THE DETERIORATION OF THIS SERUM THROUGH KEEPING IN INDIA.

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THE standardisation of an anti-venomous serum is of great practical as well as theoretical importance. It is the practical side of the question to which we propose to confine ourselves in this paper.

The snake venom which M. Calmette [1] employs both for the purpose of immunisation of his horses and for the purpose of standardisation of the serum recovered from these immune horses is a mixture of colubrine and viperine poisons, the former making up about 80 per cent. of the mixture. A solution of this mixture is heated at about 73° C. for half an hour and then filtered. It is this mixed and heated poison which is employed at Lille for both the purposes above mentioned.

Myers [2] has correctly pointed out that as we have in all cases clinically to deal with intoxication by a pure venom, either colubrine or viperine, and also by an unheated venom, it is preferable, if the true value of this serum as a curative agent against snake-bite is to be determined, to use a pure unheated poison for its standardisation. The object, then, of our investigation was to ascertain as exactly as possible the neutralising power of Calmette's anti-venomous serum when tested with pure, fresh, and carefully dried cobra poison. Further, in consequence of the observations made by us in a recent case of cobra intoxication,[3] we have extended our investigations so as to ascertain if any deterioration of the serum takes place through keeping in this country. In another communication we hope to be able to record the results of similar experiments made with the venom of Russell's viper (*Daboia Russellii*).

The method of standardisation of the anti-venomous serum which we adopted in our experiments was the method now recognised as giving the most accurate results. It is based on the now almost generally-acknowledged fact that snake-poison toxin and its antitoxin interact directly and that this neutralisation is, so far as our knowledge goes, independent of vital activity. The evolution of this method is briefly stated as follows. The method which M. Calmette [4] recommends and still practises is the following:—The dose of venom (mixed and heated) which will kill a rabbit of two kilos in weight in from 15 to 20 minutes when injected into the marginal vein of the ear is determined; then the minimum amount of serum which will prevent death when injected intravenously five minutes before this dose is ascertained, which is done by experimenting with varying quantities of serum. If one cubic centimetre is able to accomplish this M. Calmette says that the serum contains 2000 immunity units per cubic centimetre or 20,000 per 10 cubic centimetres.

Martin of Melbourne [5] was the first to use the method of mixing the venom and serum *in vitro* before the injection. In some early experiments with the poison of the Australian tiger snake (*Hoplocephalus curtus*) he used only a single lethal dose in estimating the curative value of Calmette's serum. However, in some later researches he recognised that this method was fallacious inasmuch as if the amount of serum was able to neutralise even a mere fraction of the single lethal dose the animal would recover even though the larger part of the poison remained unneutralised. He therefore recommended the employment of at least 10 lethal doses.

Along with one of us Major D. Semple, R.A.M.C.,[6] has pointed out that the following objections could be taken to Calmette's method: (1) that there is no direct estimation of the amount of venom which a given quantity of serum will neutralise;[7] and (2) that there is no estimation made of the amount of venom the injection of which an untreated animal is capable of surviving. Further, we showed that Calmette's test dose for the rabbit amounted to about three lethal doses for that animal. We thus gave a value for the serum in terms of its neutralising power and not as in the method used at Lille in terms of its preventive power. With such a small test dose as three lethal doses, unless careful attention be paid to the second objection mentioned above, it is evident that a much enhanced neutralising power would be given to the serum.

The next step in advance was made by Myers.[8] As previously mentioned this observer pointed out that in order to ascertain the strength of an anti-venomous serum for practical purposes it was *a priori* preferable to test it against a pure venom, such as pure cobra poison or pure Daboia poison. He further showed that it was preferable also to use unheated venom, inasmuch as heating at the temperature employed by M. Calmette causes important changes in cobra venom, altering it considerably from the natural poison as injected by a snake. Further, Myers recommended that a cheap, small, and susceptible animal should be employed. He showed that mice of about 15 grammes in weight answer all requirements, and recommended that these animals should be used. He further designated Calmette's method as unscientific, inasmuch as by injecting the serum before the venom the completion of the reaction between these two bodies does not take place before they enter the blood-stream. He showed that much more accurate results are attained when the poison and serum are mixed *in vitro* than by Calmette's method. Finally, he recognised the necessity of using a multiple, and if possible a large multiple, of the minimum lethal dose.

In the series of experiments which we have now to present these various points were kept carefully in view. We may preface the protocols by giving a short account of the method employed and of the general results obtained.

The animals which we used were rats from 115 to 120 grammes in weight. These fulfil all the conditions indicated by Myers. They are cheap and the supply is abundant, while with care no difficulty is experienced in handling them. At the same time they are entremely susceptible to cobra poison, as susceptible as, if not more so than, any of the other laboratory animals. Thus for a mouse of 15 grammes Myers [9] states the minimum lethal dose of cobra venom to be 0·012 milligramme, or in other words 0·8 milligramme per kilo. For rabbits Elliot [10] has found that a certain lethal dose of pure cobra poison injected subcutaneously is 0·7 milligramme per kilo. In our experiments we found that the minimum lethal dose of this poison for a rat of about 120 grammes was 0·04, or at the rate of 0·33 milligramme per kilo. Another reason for selecting rats was that horses' serum, even in large doses, has no lethal action on them as it has on mice. As in the course of our experiments large doses of serum had to be given this was an important point. Great care was taken in choosing rats of one size for all experiments—viz., of about the weight mentioned above. The venom used was pure, fresh, unheated cobra poison. This was collected from a number of living, full-sized, healthy cobras by "milking" the glands after the method practised by M. Calmette. The poison was then thoroughly dried over lime and kept till used in an air-tight tube away from light. Before weighing it was pounded in a mortar and was then again dried over sulphuric acid. A solution of this powdered venom in normal salt solution was made. The strength of this solution was 0·1 per cent. When necessary a tenfold dilution of this material was employed. All the solutions were freshly made, as required, so that no deterioration of the poison was possible through keeping in solution. All injections were made in the inner side of the thigh.

Series No. 1 was undertaken to determine the minimum lethal dose for a rat of from 115 to 120 grammes in weight.

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[1] Annales de l'Institut Pasteur, 1897, p. 225.
[2] THE LANCET, May 19th, 1900, p. 1433.
[3] THE LANCET, Jan. 5th, 1901, p. 25.
[4] Loc cit.
[5] Intercolonial Medical Journal of Australasia, August 20th, 1897. Ibid., April 20th, 1898. Brit. Med. Jour., 1898, 1. 1120.
[6] Brit. Med. Jour., April 1st, 1899, p. 781.
[7] This is evident from the description of Calmette's method already stated. From this it will be seen that the standard which he adopts is the weight in grammes of a rabbit which one cubic centimetre of serum can protect against a quantity of poison which would kill a control animal in 20 minutes.
[8] Loc. cit. [9] Loc. cit.
[10] Brit. Med. Jour., Feb. 10th, 1900, p. 309.

A certain lethal dose was found to be 0·04 milligramme and the maximum non-lethal dose was found to be 0·035 milligramme.

The remaining series of experiments were undertaken with a view of determining the neutralising power of various samples of anti-venomous serum. These samples were of different ages and had been in India for varying periods of time. They had been stored in different places and had therefore been exposed to different degrees of heat. The test dose of venom which was used in all cases consisted of ten times the minimum lethal dose—i.e., 0·4 milligramme. This quantity was mixed *in vitro* with varying amounts of the serum to be tested. The mixture was allowed to stand at laboratory temperature (about 25° C.) for at least half an hour. All injections were made, as in the experiments detailed in Series No. 1, subcutaneously in the inner side of the thigh. In calculating the amount of venom which the serum had been able to neutralise or had failed to neutralise the maximum non-lethal dose—i.e., 0·035 milligramme—was deducted from the test dose in all cases.

In Series No. 2 a serum which had recently been received from Lille was used. We take this opportunity of thanking M. Calmette for his courtesy in placing this serum at our disposal. This sample was dated Sept. 17th, 1900. It arrived in Bombay on Oct. 14th of the same year. Our experiments with it were made between Nov. 10th and Dec. 5th. We are justified, therefore, in considering this as perfectly fresh serum, as fresh as it would be possible to get in this country. A reference to the protocols will show that 0·5 cubic centimetre was able to prevent death while 0·45 cubic centimetre did not accomplish this. In other words, 0·5 cubic centimetre of this serum was able to neutralise 0·4—0·035 milligramme = 0·365 milligramme—namely, 1 cubic centimetre could neutralise 0·73 milligramme. Working with a mixed and heated venom Semple and one of us[11] found that one cubic centimetre of fresh serum was able to neutralise 1·5 milligrammes of this mixed poison. This is the same value which M. Calmette attributes to his serum when this is expressed in terms of the neutralising power of the serum. Comparing these three results we see at once, therefore, the importance of testing the serum against a pure unheated venom and not with a mixed and heated poison.[12]

The serum employed to perform the experiments detailed in Series No. 3 was obtained by purchase from Messrs. Phillips and Co., chemists, Bombay. It bore the date May 8th, 1900. The vendors informed us that they had received it from Europe about the end of August, 1900 and that it had not been out of Bombay. Our experiments were made between Dec. 5th and 12th, 1900. It will be seen therefore that this serum had been in Bombay for about three months. One of these months—viz., October—is one of the hottest months of the year.

A reference to the protocols will show that 0·6 cubic centimetre was able to prevent death, while 0·5 cubic centimetre would not accomplish this. It is evident therefore that one cubic centimetre of this serum was able to neutralise 0·61 milligramme. This result would appear to point to a slight deterioration of the serum having taken place through keeping in Bombay, even for the short time mentioned above.

The serum used in Series No. 4 of our experiments was obtained from the Natural History Society of Bombay. We take this opportunity of thanking Mr. Phipson, the honorary secretary of that society, for his kindness in placing it at our disposal. This sample of serum was not dated. Mr. Phipson, however, thought that it had been in his possession for about four years. On reference to Lille, M. Calmette informed us that he did not know the exact age of the serum, but it was at least more than three years old. From the protocols it will be seen that although one rat which received 0·75 cubic centimetre of serum recovered after being very ill the quantity of serum necessary to prevent a fatal result with certainty was 1·25 cubic centimetres. It is evident therefore that one cubic centimetre of this serum was able to neutralise only 0·29 milligramme of pure cobra venom.

[11] Loc. cit.

[12] This comparison, as well as other similar comparisons to be detailed later, is made on the assumption that all specimens of anti-venomous sera sent out from Lille have when fresh the same neutralising power. There can be no doubt, however, that such a desirable result cannot practically be obtained. It is probable, therefore, that a small proportion of the differences in the neutralising power of the sera with which we experimented may be due to slight initial differences in this neutralising power.

The fifth series of experiments detailed in the protocols was made with serum which was sent to us by Captain Mitchell of Nasik. In view of the results obtained the history of this sample of serum is interesting. It was originally the property of the Bombay Natural History Society and was got from Europe at the same time as the serum used in Series No. 4 of our experiments. It was, therefore, more than three years old. Soon after its arrival in Bombay it was sent to Nasik. It was kept there till Captain Mitchell sent it to us in October, 1900. Our experiments with this serum were made between Oct. 16th and Nov. 1st, 1900. A reference to the protocols will show that 0·8 cubic centimetre was able to prevent death when our test dose was employed. In other words one cubic centimetre of this serum was able to neutralise with certainty 0·46 milligramme of pure cobra poison.

For Series No. 6 of our experiments the sample of serum was obtained from Lieutenant-Colonel Gimlette, I.M.S., residency surgeon, Indore. This sample was dated Oct. 17th, 1898. Its history was as follows. It was imported to India by Messrs. Smith, Stanistreet, and Co., chemists, Calcutta, arriving in this country about the end of August, 1899. It was sent to Indore on Sept. 6th of the same year. Colonel Gimlette despatched it to Bombay at the end of November, 1900, and our experiments were completed between Nov. 29th and Dec. 3rd. It will be seen, therefore, that for over a year it lay at Indore and was thus subjected to the great heat of this place during one hot season. A reference to the protocols will show that 1·7 cubic centimetres of this serum failed to neutralise the test dose, while two cubic centimetres were able to accomplish this. The rat which received this latter quantity was ill for a short time. We may take it therefore that two cubic centimetres were the amount which could neutralise just over nine lethal doses, or in other words that one cubic centimetre was able to neutralise only 0·18 milligramme of venom.

The experiments detailed in Series No. 7 of the protocols were made with a serum received from Mr. Hankin of Agra. This sample bore the date Sept. 17th, 1895. It had been stored in Agra for over four years. It was received in Bombay on Oct. 17th, 1900, and our experiments with it were completed between Nov. 27th and Dec. 10th. A glance at the protocols will show that 2·5 cubic centimetres of this serum—i.e., the largest amount used—were not able to prevent death when our test dose of 10 lethal doses was employed. From this it is evident that one cubic centimetre of this Agra serum could not neutralise even 0·14 milligramme of poison. The serum can therefore be said to have lost all neutralising power for practical purposes.

The serum employed in the eighth and last series of experiments detailed in the protocols was received from Lieutenant W. G Liston, I M.S., Civil Surgeon, Ellichpur, Berar. It was dated Nov. 7th, 1896. Lieutenant Liston had purchased it from Lille in September, 1898, and had brought it with him to India in the following month. During the hot seasons of 1899 and 1900 the serum had been subjected to the heat of Berar at two stations—viz., Hingoli and Ellichpur. It was sent to Bombay in December, 1900. The experiments made by us were completed between Dec. 10th and 14th. From the protocols it will be seen that two cubic centimetres of this serum failed to neutralise the test dose. We can therefore conclude that one cubic centimetre was not able to neutralise 0·18 milligramme of venom. It is unfortunate that no more serum was available to complete this series. It is, however, evident that like the Agra serum it had lost for all therapeutical purposes its power to neutralise pure cobra poison.

We may now pass on to consider some of the practical bearings which the data collated above and detailed in the protocols have on the standardisation of anti-venomous serum and on the therapeutics of cobra poisoning. First, our experiments conclusively prove Myers's statement that it is necessary in standardising this serum to use a pure unheated poison. Both in Calmette's method of standardisation and in the method followed by Semple and one of us a mixed venom containing about 80 per cent. of colubrine poison was employed. The solution of this mixture was heated at 73° C. for half an hour and was then filtered. The conclusion arrived at in both cases was the same—viz., that one cubic centimetre of serum was able to neutralise 1·5 milligramme of this venom. As this mixture contained only a fifth part of viperine poison it appeared justifiable to conclude that one cubic centimetre of serum would be able to neutralise at least about 1·2 milligrammes of pure cobra

poison. Our experiments, however, have shown that such a hypothesis is not borne out by fact and that one cubic centimetre of serum can only neutralise about 0·7 milligramme of pure cobra venom.[13] Secondly, it is evident that any attempt to calculate the therapeutic dose of the serum can only be made when the exact measure of its power of neutralising a natural poison has been ascertained. Let us consider this point in some detail.

Calmette recommends that from 10 to 20 cubic centimetres[14] be given as the dose in all cases of bites from poisonous snakes. We shall see later that such a dose would probably be insufficient in some cases of cobra bite.

Semple and one of us[15] calculated that 15 cubic centimetres were sufficient to save a patient if this quantity were injected into the blood before the lapse of such period of time as may be required for the absorption of the lethal dose of venom. This calculation, however, was made on the following assumptions:—1. That the minimum lethal dose of cobra venom for a man of 30 kilos in weight was, as estimated by Fraser[16] about 31 milligrammes and that consequently we may take 30 milligrammes as the maximum non-lethal dose for an average man. 2. That a full-sized cobra can inject at each bite a quantity of venom which in the dried state amounts to from 30 to 45 milligrammes. These amounts have been demonstrated experimentally by Calmette.[17] To save a man bitten by a cobra, injecting the maximum quantity possible, we should therefore have to give an amount of serum capable of neutralising 45 — 30 milligrammes = 15 milligrammes of cobra poison. 3. That one cubic centimetre of serum was capable of neutralising one milligramme of pure cobra venom. This figure was arrived at by assuming that pure unheated cobra poison was not more than a third more deadly that the mixed venom which we employed. This mixture it will be remembered, contained 80 per cent. of colubrine poison, and one cubic centimetre of serum was able to neuralise 1·5 milligrammes of it. It is evident, therefore, that were these three assumptions correct 15 cubic centimetres of serum would be a safe dose to employ in all cases of cobra-bite. Our experiments, however, have demonstrated that one cubic centimetre of serum is only capable of neutralising about 0·7 milligramme of pure cobra venom, while Myers[18] from his experiments on mice makes the quantity neutralised by one cubic centimetre even less than this—viz., 0·6 milligramme. Now, basing the calculation on this fact—viz., that one cubic centimetre of serum can neutralise from 0·6 to 0·7 milligramme of cobra venom—and on the first two assumptions stated above, we arrive at the conclusion that instead of 15 cubic centimetres of serum, a dose of from 22 to 25 cubic centimetres would have to be given to prevent death from the bite of a full-sized cobra.

As we have already stated, one of the assumptions on which the above calculation is founded is that the minimum lethal dose of cobra venom for a man is as much as 31 milligrammes. This assumption is based partly on the fact, experimentally shown by Calmette[19] and other observers, that for such animals as the guinea-pig, the rabbit, the dog, the monkey and the ass the larger the animal the greater is the amount of cobra venom, weight for weight, required to cause death. This rule, however, does not hold good for all species of animals. Thus Myers[20] has shown that the minimum lethal dose of cobra poison for a mouse of 15 grammes in weight is 0·012 milligramme. If the rat were as susceptible to this poison as is the mouse the lethal dose for a rat of 120 grammes weight would be 0·096 milligramme. We have, however, seen above that the minimal lethal dose for a rat of this size is only 0·04 milligramme—namely, that the rat is at least twice as susceptible to cobra venom as the mouse.

In view of this fact it would seem expedient in estimating the dose of anti-venomous serum to be given in a case of cobra-bite to base our calculations on the assumption that man is as susceptible as the most susceptible animal with which experiments have been made—viz., the rat. Assuming, then, that man is as susceptible as the rat, it is evident that the minimum lethal dose for a man of 60 kilogrammes in weight would be about 20 milligrammes. We can therefore calculate that if a cobra had injected the maximum amount of venom possible—viz., 45 milligrammes (an assumption which it would be necessary to make in every case of snake-bite)—the quantity of serum required to merely save the life of anyone receiving this injection would be the amount which was capable of neutralising at least 45 — 19 milligrammes = 26 milligrammes. This amount of fresh serum—namely, serum of which one cubic centimetre was able to neutralise about 0·7 milligramme of cobra venom, would be about 37 cubic centimetres. It is interesting in this connexion to point out that Calmette[21] himself has arrived at the conclusion that the minimum lethal dose of cobra venom for a man is only about 10 milligrammes. Working on this hypothesis it is evident that it would require about 50 cubic centimetres of serum to save a patient who had received the maximum quantity of venom which a cobra can inject.

Our contention that 15 cubic centimetres of serum is quite an inadequate dose for the treatment of a case of cobra bite receives corroboration from consideration of the accidental case which occurred in this laboratory a short time ago.[22] The only treatment employed in this case was the subcutaneous injection of anti-venomous serum. Immediately after the accident 18 cubic centimetres of old serum were injected. This was the serum obtained from the Bombay Natural History Society the neutralising power of which was tested in the experiments detailed in Series No. 4 of the protocols. From a reference to the protocols it will be seen that one cubic centimetre of this serum was able to neutralise 0·29 milligramme of pure cobra venom. It follows, then, that 18 cubic centimetres of such a serum was equivalent to 7·5 cubic centimetres of fresh serum—that is, of serum one cubic centimetre of which was capable of neutralising 0·7 milligramme of venom. Our patient therefore received as a preliminary dose a quantity of serum equivalent to 7·5 cubic centimetres of a perfectly fresh serum. In spite of this injection well-marked general symptoms referable to the central nervous system set in from about two and a half to three hours after the accident. The case in all probability would have had a fatal ending had not a second injection of fresh serum been given before the symptoms had progressed too far.

Now, in this case the poison from one gland only was injected. We can therefore conclude that 15 cubic centimetres of fresh serum would have been quite inadequate to have prevented the onset of symptoms of intoxication and probably would not have prevented death had the patient received the quantity of poison contained in both glands. Shortly after the onset of symptoms 10 cubic centimetres of comparatively fresh serum were injected. This serum was got from Messrs. Phillips and Co. (*vide* Series No. 3 in the protocols). We have seen that one cubic centimetre of this serum was capable of neutralising 0·61 milligramme of cobra poison. The dose which was injected was therefore equivalent to 8·5 cubic centimetres of perfectly fresh serum such as was used in the experiments detailed in Series No. 2 of the protocols. Our patient therefore received in all a quantity of serum equivalent to 16 cubic centimetres of perfectly fresh material. All symptoms in this case, in which the bite was inflicted by only one fang, soon passed off after the second injection of serum. Since, however, the second dose was given after some of the poison had already joined on to the central nervous system it is for *a priori* reasons necessary to conclude that a smaller dose would have sufficed if the whole quantity had been injected before the onset of any symptoms. On the other hand, it must be remembered that the cobra which inflicted this bite had been in captivity for some months and would not consequently yield as much poison as an ordinary snake in nature would do. For is it an observation of common occurrence in this laboratory that a cobra newly caught will yield from 20 to 30 large drops of poison, while after he has been a captive for some time this quantity will have diminished to from six to 10 drops and in time to *nil*.

From what we have stated above it is evident that the question of the dose of serum to be injected in cases of cobra bite turns upon factors which cannot be directly experimentally determined—namely, (1) upon the amount of poison which the snake has injected and (2) upon the amount of cobra venom which an average man can survive. In view of the fact, however, that in the treatment of any

[13] The serum which we used in these experiments although newly arrived in India had necessarily been subjected for a short time to the heat of the voyage out—viz., in the Red Sea and the Indian Ocean. A slight deterioration may thus have taken place. This, however, could only account for a small proportion of this great difference.

[14] This is the dose prescribed in the printed instructions sent out with every bottle of serum.

[15] Loc. cit.

[16] Brit. Med. Jour., 1896, p. 967.

[17] Le Venin des Serpents, 1896.

[18] Loc. cit. [19] Loc. cit. [20] Loc. cit.

[21] Loc. cit. [22] THE LANCET, Jan. 5th, 1901, p. 25.

case of cobra-bite we must always estimate the dose of anti-venine to meet the possibility of the snake having injected the maximum quantity possible—i.e., about 45 milligrammes—and in view of the fact that man may be as susceptible, weight for weight, as the rat, or perhaps more susceptible, it seems to us, from the considerations put forward above, that a dose of from 30 to 35 cubic centimetres of fresh serum or the equivalent of this should be given in every case of cobra-bite. A larger dose would of course be necessary if symptoms had set in before the treatment was begun. At any rate the history of this case shows that a dose of about 15 cubic centimetres would be quite inadequate in most cases of cobra-bite.

We may now pass on, in conclusion, to consider briefly the question of the deterioration which anti-venomous serum undergoes by keeping in India. The data bearing on this subject are contained in detail in the protocols, Series No. 2 to No. 8 inclusive. These data may be briefly summarised in tabular form as follows:—

TABLE I.—*The Deterioration of Anti-venomous Serum by Keeping in India.*

Series in protocols.	Age of the serum.	Length of time in India.	Where kept in India.	Neutralising power.	Remarks.
No. 2	Two months.	One month.	Bombay.	1 cubic centimetre neutralised 0·75 milligramme.	This serum may be regarded as perfectly fresh serum.
No. 3	Seven months.	Three months.	Bombay.	1 cubic centimetre neutralised 0·61 milligramme.	—
No. 4	Over three years.	About three years.	Bombay.	1 cubic centimetre neutralised 0·29 milligramme.	—
No. 5	Over three years.	About three years.	Nasik and Bombay.	1 cubic centimetre neutralised 0·46 milligramme.	It is uncertain how long this sample had been in Bombay and how long in Nasik.
No. 6	Four years.	One and a quarter years.	Indore.	1 cubic centimetre neutralised 0·18 milligramme.	—
No. 7	Five years.	Over four years.	Agra.	1 cubic centimetre failed to neutralise 0·14 milligramme.	—
No. 8	Four years.	Two and a quarter years.	Bombay and Berar.	1 cubic centimetre failed to neutralise 0·18 milligramme.	In Bombay six months and in Berar one and three-quarter years.

The protective power ascribed by M. Calmette to all samples of sera sent out from Lille is 20,000 units per 10 cubic centimetres. We may, therefore, assume that all brews when fresh possess practically the same neutralising power (*vide* Footnote 12). A study of the above table shows that a progressive deterioration takes place from keeping the serum in India. Thus it will be noticed on the one hand that while the serum which was seven months old and had been in India for only three months (Series No. 3) already showed a slight diminution in its neutralising power, on the other hand, the sera which had been kept for some years in the Berar (Hingoli and Ellichpur), i.e., Series No. 8 and in Agra, i.e., Series No. 7, had practically lost all neutralising power, and the sera which had been stored at Indore, Bombay, and Nasik had detriorated to a considerable extent but had not completely lost all neutralising power.

Let us consider for a moment the climatic conditions as regards temperature which prevail at these different places. In the cold season Agra and the Berars have a comparatively low temperature; but for three or four months of the year the heat in these districts is excessive, the maximum temperature in the shade being seldom below 105° F. and often reaching 110° F. and over. Indore also has a severe hot season and a comparatively cool "cold" season, a similar climate in fact to that of Berar, although, perhaps, the maximum temperature does not reach so high as in the other two cases. The great neutralising power of the serum which had been kept at Indore, compared with the samples kept at Berar and Agra, can be accounted for by the fact that the former sample had been subjected to this great heat for only one hot season, while the sera kept at Berar and Agra had been stored in these districts during two and four hot seasons respectively.

The results obtained with Series No. 4 and Series No. 5 are especially interesting. Both these sera were of the same age and were imported to Bombay at the same time. One sample—viz., No. 5—had been stored for a considerable time at Nasik after Bombay. Now, the temperature of Nasik during the cool season of the year is much lower than is that of Bombay. On the other hand, during the hot months, March to May inclusive, the maximum shade temperature of Nasik is only slightly lower than is that of Bombay, while the minimum temperature is much lower. On the whole, therefore, we may take it that the serum which had been kept at Nasik had not been subjected to nearly such a high mean temperature during the year as had that serum which had been stored in Bombay. In consequence, the neutralising power of the former was more than a half greater than the neutralising power of the latter. We may conclude then from these data that anti-venomous serum undergoes a progressive and fairly rapid deterioration when stored in hot climates, and that this deterioration is greater and more rapid the higher the mean temperature to which it is subjected. The practical bearings of the results of these observations are so patent as to require no further discussion.

PROTOCOLS.

Series No. 1.—The poison used was carefully dried, pure, fresh cobra venom. It was unheated. A 0·1 per cent. solution in sterile normal saline solution was made. Ten-fold and hundred-fold dilutions of the original solution were used when necessary. The weights refer to the original dried venom. All rats were carefully selected of about 118 grammes weight. The injections were made subcutaneously in the inner side of the thigh.

TABLE II.—*Experiments to determine the Minimum Lethal Dose of Pure Cobra Venom for a Rat of about 118 grammes.*

Animal.	Amount of dried venom in milligrammes.	Result.
Rat 1	0·1	Died within 2 hours.
,, 2	0·09	,, ,, ,,
,, 3	0·08	,, ,, ,,
,, 4	0·07	,, ,, 3 ,,
,, 5	0·06	,, ,, ,,
,, 6	0·05	,, ,, ,,
,, 7	0·05	,, ,, ,,
,, 8	0·045	Very ill for 24 hours; died in four days.
,, 9	0·04	Died in 3½ hours.
,, 10	0·04	,, 2½ ,,
,, 11	0·035	Ill for 16 hours; recovered.
,, 12	0·035	,, 6 ,, ,,
,, 13	0·03	Slightly ill for 3 hours; recovered.
,, 14	0·03	No symptoms.
,, 15	0·025	,, ,,
,, 16	0·02	Slight symptoms; recovered.
,, 17	0·01	No symptoms.
,, 18	0·005	,, ,,

From the above table it appears, then, that 0·04 milligramme is a certain lethal dose and that 0·035 milligramme is a dose which a rat of this size can survive—i.e., a maximum non-lethal dose. In the series of experiments No. 2 to No. 8, detailed hereafter, 10 lethal doses—namely, 0·4 milligramme—were mixed *in vitro* with varying amounts of sera of different ages and which had been kept under different conditions of temperature. The mixtures were allowed to stand at laboratory temperature (about 25° C.) for at least half an hour and were then injected subcutaneously in the inner side of the thigh. Carefully selected rats of about 118 grammes were used in all cases. In calculating the amount of venom which the serum had been able to neutralise or had failed to neutralise the maximum non-lethal dose—

namely, 0·035 milligramme—was deducted in all cases. These series are as follows.

Series No. 2.—The serum used in this series of experiments was received from Lille in October, 1900. It was dated Sept. 17th, 1900 The experiments were completed between Nov. 10th and Dec. 5th.

TABLE III.—*Experiments to ascertain the Amount of Venom which One Cubic Centimetre of Fresh Serum newly imported was capable of neutralising.*

Animal.	Amount of dried venom in milligrammes.	Amount of serum in cubic centimetres.	Result.
Rat 1 ...	0·4	0·15	Died in 5 hours,
„ 2 ...	0·4	0·2	„ 10½ „
„ 3 ...	0·4	0·2	„ 7½ „
„ 4 ...	0·4	0·2	„ 2½ „
„ 5 ...	0·4	0·2	Died within 48 hours.
„ 6 ...	0·4	0·25	Died in 2½ hours.
„ 7 ...	0·4	0·25	Died within 17 hours.
„ 8 ...	0·4	0·25	„ „ 5 „
„ 9 ...	0·4	0·3	Very ill for 48 hours; recovered.
„ 10 ...	0·4	0·3	Died in 5 hours.
„ 11 ...	0·4	0·3	„ 2½ „
„ 12 ...	0·4	0·3	Died within 5 days.
„ 13 ...	0·4	0·35	„ „ 48 hours.
„ 14 ...	0·4	0·35	„ „ „ „
„ 15 ...	0·4	0·35	Died in 17 hours.
„ 16 ...	0·4	0·4	Died within 40 hours.
„ 17 ...	0·4	0·4	Ill for 5 days; recovered.
„ 18 ...	0·4	0·4	Died within 48 hours.
„ 19 ...	0·4	0·45	„ „ 3 days.
„ 20 ...	0·4	0·45	Died after 8 days.
„ 21 ...	0·4	0·5	No symptoms.
„ 22 ...	0·4	0·5	Ill for 2 days; recovered.
„ 23 ...	0·4	0·6	„ „ „
„ 24 ...	0·4	0·7	No symptoms.

From the above series we can conclude that 0·45 cubic centimetre of this serum failed to neutralise with certainty 0·4 — 0·035 milligramme = 0·365 milligramme, while 0·5 cubic centimetre could neutralise this amount. In other words, one cubic centimetre was able to neutralise 0·73 milligramme.

Series No. 3.—The serum used in this series was dated May 8th, 1900. It was purchased from Messrs. Phillips and Co., chemists, in Bombay, who had received it from England about the end of August. The experiments were completed between Dec 5th and 12th. The serum had, therefore, been in Bombay during one of the hottest months of the year—viz., October.

TABLE IV.—*Experiments to ascertain the Amount of Venom which One Cubic Centimetre of Comparatively Fresh Serum was capable of neutralising.*

Animal.	Amount of dried venom in milligrammes.	Amount of serum in cubic centimetres.	Result.
Rat 1 ...	0·4	0·2	Died in 2 hours.
„ 2 ...	0·4	0·3	„ „ „
„ 3 ...	0·4	0·4	Died within 42 hours.
„ 4 ...	0·4	0·5	„ „ „ „
„ 5 ...	0·4	0·5	„ „ 46 „
„ 6 ...	0·4	0·6	Ill for one day; recovered.
„ 7 ...	0·4	0·6	No symptoms.
„ 8 ...	0·4	0·7	„ „
„ 9 ...	0·4	0·7	„ „
„ 10 ...	0·4	0·8	„ „

From the above series we can conclude that 0·5 cubic centimetre of this serum failed to neutralise 0·4 — 0·035 milligramme = 0·365 milligramme, while 0·6 cubic centimetre could neutralise this amount at least—namely, that one cubic centimetre was able to neutralise 0·61 milligramme.

Series No. 4.—This serum had been in the possession of the secretary of the Bombay Natural History Society for at least three years. M. Calmette informed us that it was at least three years old, probably more.

TABLE V.—*Experiments to ascertain the Amount of Venom which One Cubic Centimetre of a Serum which had been in Bombay for over Three Years was capable of neutralising.*

Animal.	Amount of dried venon in Milligrammes.	Amount of serum in cubic centimetres.	Result.
Rat 1 ...	0·4	0·25	Died in 1½ hours.
„ 2 ...	0·4	0·5	„ „ „
„ 3 ...	0·4	0·75	„ 3 „
„ 4 ...	0·4	0·75	Very ill for 48 hours; recovered.
„ 5 ...	0·4	0·85	Died within 36 hours.
„ 6 ...	0·4	1·0	Died in 6½ hours.
„ 7 ...	0·4	1·0	„ 9 „
„ 8 ...	0·4	1·0	Ill; recovered.
„ 9 ...	0·4	1·15	Died after 3 days.
„ 10 ...	0·4	1·25	No symptoms.
„ 11 ...	0·4	1·5	„ „

From the above series of experiments we can conclude that 1·15 cubic-centimetres of this serum failed to completely neutralise 0·4 — 0·035 milligramme = 0·0365 milligramme, while 1·25 cubic-centimetres did neutralise this amount at least. Therefore, one cubic centimetre of this serum was able to neutralise 0·29 milligramme.

Series No. 5.—The serum used in this series of experiments was got from Captain Mitchell of Nasik. It was imported to India at the same time as the serum used in the experiments detailed in Series No. 4. After being stored in Bombay it was sent to Nasik. The exact date when this happened cannot be ascertained as no record was kept of the event. It was received at the laboratory from Nasik in October, 1900. The experiments were completed between Oct. 16th and Nov. 13th.

TABLE VI.—*Experiments to ascertain the Amount of Venom which One Cubic Centimetre of a Serum of the same age as that used in Series No. 4, but which had been kept for most of the time in a comparatively cool place, was capable of neutralising.*

Animal.	Amount of dried venom in milligrammes.	Amount of serum in cubic centimetres.	Result.
Rat 1 ...	0·4	0·25	Died within 3½ hours.
„ 2 ...	0·4	0·25	„ „ 3 „
„ 3 ...	0·4	0·25	„ „ 7 „
„ 4 ...	0·4	0·3	„ „ 4 „
„ 5 ...	0·4	0·35	„ „ 4½ „
„ 6 ...	0·4	0·4	„ „ 4 „
„ 7 ...	0·4	0·45	„ „ 5 „
„ 8 ...	0·4	0·5	„ „ 14 „
„ 9 ...	0·4	0·5	„ „ 4½ „
„ 10 ...	0·4	0·5	Very ill for 24 hours; recovered.
„ 11 ...	0·4	0·55	Died within 40 hours.
„ 12 ...	0·4	0·6	„ „ 50 „
„ 13 ...	0·4	0·65	„ „ 54 „
„ 14 ...	0·4	0·7	„ „ 30 „
„ 15 ...	0·4	0·7	Ill; recovered.
„ 16 ...	0·4	0·75	No symptoms.
„ 17 ...	0·4	0·75	Died within 8 days.
„ 18 ...	0·4	0·8	No symptoms.
„ 19 ...	0·4	1·0	„ „
„ 20 ...	0·4	1·25	„ „
„ 21 ...	0·4	1·5	„ „

From the above series of experiments we can conclude that 0·75 cubic centimetre of this serum did not completely

neutralise 0·4 – 0·035 milligramme = 0·365 milligramme, but that 0·8 cubic centimetre was able to do this. It is evident, therefore, that one cubic centimetre of this sample could neutralise 0·46 milligramme.

Series No. 6.—This serum was dated Oct. 17th, 1896. At the time of our experiments it was therefore five years old. It was imported to India in September, 1899. It arrived in Indore the same month and was kept there till November, 1900, when it was sent to Bombay. The experiments were completed between Nov. 27th and Dec. 3rd.

TABLE VII.—*Experiments to ascertain the Amount of Venom which One Cubic Centimetre of Serum received from Lieutenant-Colonel Gimlette of Indore was able to neutralise.*

Animal.	Amount of dried venom in milligrammes.	Amount of serum in cubic centimetres.	Result.
Rat 1 ...	0·4	0·5	Died in 2 hours.
,, 2 ...	0·4	0·6	,, ,, ,,
,, 3 ...	0·4	0·7	,, 1½ ,,
,, 4 ...	0·4	0·8	,, ,, ,,
,, 5 ...	0·4	0·9	,, 2 ,,
,, 6 ...	0·4	1·0	,, 1½ ,,
,, 7 ...	0·4	1·1	,, 20 ,,
,, 8 ...	0·4	1·2	,, ,, ,,
,, 9 ...	0·4	1·3	,, 2½ ,,
,, 10 ...	0·4	1·4	,, 7½ ,,
,, 11 ...	0·4	1·5	,, 19 ,,
,, 12 ...	0·4	1·6	,, 90 ,,
,, 13 ...	0·4	1·7	Died within 67 hours.
,, 14 ...	0·4	2·0	Ill for 2 days; recovered.

From the above series of experiments we can conclude that two cubic centimetres were the minimum amount of serum which was able to neutralise 0·4 – 0·035 milligramme = 0·365 milligramme. In other words, one cubic centimetre was able to neutralise 0·18 milligramme.

Series No. 7.—This sample of serum bore the date Sept 17th, 1895. Mr. Hankin informed us that he had kept no record

TABLE VIII.—*Experiments to ascertain the Amount of Venom which One Cubic Centimetre of Serum received from Mr. Hankin of Agra was able to neutralise.*

Animal.	Amount of dried venom in milligrammes.	Amount of serum in cubic centimetres.	Result.
Rat 1 ...	0·4	0·7	Died in 5 hours.
,, 2 ...	0·4	0·8	,, ,, ,,
,, 3 ...	0·4	0·9	,, 8 ,,
,, 4 ...	0·4	1·0	Died within 48 hours.
,, 5 ...	0·4	1·1	Died in 3½ hours.
,, 6 ...	0·4	1·2	,, 9 ,,
,, 7 ...	0·4	1·25	,, 19 ,,
,, 8 ...	0·4	1·3	,, 9 ,,
,, 9 ...	0·4	1·4	,, ,, ,,
,, 10 ...	0·4	1·4	,, 30 ,,
,, 11 ...	0.4	1·5	No symptoms.
,, 12 ...	0·4	1·5	Died within 18 hours.
,, 13 ...	0·4	1·5	Died in 38 hours.
,, 14 ...	0·4	1·6	Died within 22½ hours.
,, 15 ...	0·4	1.6	Died in 18 hours.
,, 16 ...	0·4	1·7	Died within 18 hours.
,, 17 ...	0·4	1·7	Died in 16½ hours.
,, 18 ...	0·4	1·8	Died within 18 hours.
,, 19 ...	0·4	1·9	,, ,, ,,
,, 20 ...	0·4	2·0	Died in 24 hours.
,, 21 ...	0·4	2·0	Died within 17 hours.
,, 22 ...	0·4	2·25	,, ,, ,,
,, 23 ...	0·4	2·5	Died in 46 hours.

of the exact date when he received this sample of serum, but that he had little or no doubt that he received it in the year in which it was prepared. We may, therefore, take it that this serum had been in Agra for over four years.

From the above series of experiments we can conclude that 2·5 cubic centimetres of this serum could not neutralise 0·4 – 0·035 milligramme = 0·365 milligramme. It is evident, therefore, that one cubic centimetre could not neutralise even 0·14 milligramme.

Series No. 8.—This serum was dated Nov. 7th, 1896. It was purchased from Lille by Lieutenant Liston, I.M.S., in September, 1898. It was imported to India the following month. For six months it was kept in Bombay, but during the hot season of 1899 and 1900 it was exposed to the great heat of Berar. It was sent to Bombay in December, 1900. The experiments were completed between Dec. 10th and 14th, 1900.

TABLE IX.—*Experiments to ascertain the Amount of Venom which One Cubic Centimetre of Serum received from Lieutenant Liston, I.M.S., Ellichpur, Berar, was capable of neutralising.*

Animal.	Amount of venom in milligrammes.	Amount of serum in cubic centimetres.	Result.
Rat 1 ...	0·4	0·5	Died within 3½ hours.
,, 2 ...	0·4	0·8	,, ,, ,, ,,
,, 3 ...	0·4	1·0	,, ,, ,, ,,
,, 4 ...	0·4	1·25	Died in 22 hours.
,, 5 ...	0·4	1·5	Died within 42 hours.
,, 6 ...	0·4	1·75	,, ,, 56 ,,
,, 7 ...	0·4	1·75	,, ,, 48 ,,
,, 8 ...	0·4	2·0	,, ,, 42 ,,

From the above series of experiments we can say that two cubic centimetres of this serum failed to neutralise 0·4 – 0·35 milligramme = 0·365 milligramme—namely, that one cubic centimetre could not neutralise 0·18 milligramme.

THE FEEDING OF DIPHTHERIA PATIENTS, WITH SPECIAL REFERENCE TO CHILDREN AND SEVERE CASES.

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IN the treatment of diphtheria the feeding is of great importance, while at the same time it is attended with the greatest difficulty, owing to the inability of many patients to take or to retain nourishment given by the mouth. So much depends upon the nurse that it is essential to obtain the best nursing available. Feeding may be carried out by (1) the mouth; (2) the nasal tube; (3) the rectum; and (4) subcutaneous injections. In all cases, where practicable, feeding should be performed by the mouth. Certain conditions, however, render mouth feeding impossible or inadvisable. Chief amongst these are the following: (1) inability to swallow owing to pain or faucial swelling; (2) some cases of regurgitation, which will be referred to later; (3) entrance of food into the larynx in spite of slow and careful feeding indicated by the patient coughing when fed; (4) in certain cases, owing to struggling, the time taken and the exhaustion consequent on mouth feeding; and (5) continued vomiting—(*a*) vomiting may be present almost from the onset of diphtheria; (*b*) early vomiting, commencing about the middle or end of the second week; and (*c*) late vomiting, which occurs after some weeks of the disease. Generally speaking, vomiting which begins early is of graver import than that which starts late in the disease. It is well to remember that cases occur in which patients can be fed with a nasal tube without vomiting, although they vomit when fed by the mouth. In some this is probably due to distaste for their nourishment.

I.—MOUTH FEEDING.

In the early stages of diphtheria milk should be the chief

article of food. It should be given either mixed with some diluent, as barley water, or in such form as Benger's or Mellin's food. It may be given hot or cold, sweetened or flavoured with tea, coffee, or cocoa. As a rule children prefer milk sweetened, and this is probably a cause of some taking Mellin's food readily but objecting to diluted milk. Adults, on the other hand, prefer milk flavoured. Children (and the bulk of the cases consist of children) on admission to hospital are usually fed every three or four hours. They will take from four to five ounces of milk each feed. This is diluted with a certain amount of barley water. The proportion of barley water added varies; usually it is in the ratio of one part to three parts of milk. Severe cases and infants up to about two years are fed every two hours and often will not take more than two ounces at a time. Children, even when they have membrane on their throats, will take their nourishment fairly well, but when the membrane has peeled off they sometimes have difficulty and pain in swallowing, and need a lot of persuasion even to take a small quantity of nourishment by the mouth. At first very few children are willing to drink out of a feeder. They much prefer a small medicine-glass or a teaspoon. All nourishment should be measured, and this specially so in severe cases. In cases which progress favourably, and where there are no special indications against it, the milk may in a short time be supplemented by other forms of nourishment, and the patient may soon return to an ordinary diet which should be both light and nutritious. Severe cases should be kept on a slop or modified slop diet for some little time longer than mild cases.

Regurgitation, &c.—Children with regurgitation must be fed very slowly. On no account should they be allowed to feed themselves. When regurgitation persists even with slow feeding all liquids should be thickened. Thus the milk may be given in the form of thick Benger's food, milk arrowroot, or a certain amount may be given as milk jelly, made by the addition of isinglass to the milk. Milk jelly can be made equally well with peptonised milk and is by no means unpalatable. Unfortunately, children often do not care for milk jelly. It is generally more liked in summer than in winter. Eggs may be tried as a suitable article of diet, provided they are assimilated, and sometimes patients with regurgitation are able to swallow them, if lightly boiled and made into a paste with bread crumbs. There are some patients who can take solids comfortably by the mouth, but are quite unable to swallow liquids. Others, owing to the length of time taken in feeding, are unable to take sufficient nourishment by the mouth. In these cases mouth feeding should be supplemented by nasal feeding, or, if necessary, by rectal feeding. In others, again, nothing can be taken by the mouth. These remarks on cases with regurgitation apply equally well to patients who cough on feeding. But here I think it is advisable that feeding by the mouth be left off earlier than in cases where regurgitation is the difficulty.

Vomiting.—Some patients suffering from diphtheria are inclined to retch and to vomit from the first. Sometimes this may be due to previous injudicious feeding or causes distinct from the diphtheria. It is best not to press these cases with nourishment at first. They should only have small quantities of peptonised milk, say, one ounce or less, hourly. Should the vomiting persist, feeding by the mouth should be stopped and other modes of feeding substituted. If the vomiting cease on the milk being peptonised the quantity may be cautiously increased, finally the peptonisation omitted, and the patient slowly be allowed to return to an ordinary milk diet. Sometimes patients will take and retain water, raw-meat juice, or white of egg and water, although they reject peptonised milk. Raw meat juice or white of egg may be added to the peptonised milk if it is retained. Bread jelly, made as described by Dr. Cheadle, may be also tried. Early and late vomiting should be treated on the same lines as above. Generally, however, feeding by the mouth has to be entirely omitted for a time and rectal alimentation substituted. Vomiting is sometimes preceded by retching—a valuable indication to limit the amount and to alter the kind of nourishment, if necessary to go back to a strict milk diet and to have the milk peptonised. Occasionally hot applications to the epigastrium are of use in controlling vomiting to a certain extent.

Severe cases.—In cases of severe diphtheria, in which vomiting ultimately supervenes, the period previously to this may be quite free from vomiting. In such cases the milk should be supplemented by beef-tea, raw meat juice, eggs beaten up and mixed with a little brandy and milk—a good mixture being one egg, a little powdered sugar, half an ounce of brandy, and milk to two ounces. This may be given in small portions over 12 or 24 hours. The nourishment should be given in small quantities at frequent intervals. Great care must be taken to satisfy oneself that the nourishment taken is absorbed. These are cases in which one anticipates early or late vomiting, when the feeding will become more and more difficult. Therefore, if possible, they should be fed up with due care previously to the onset of vomiting.

Stimulants.—The administration, when indicated, of alcoholic stimulants is often beset with difficulty owing to the frequency with which vomiting follows their use. Brandy is the most generally suitable form, and in some cases can be given in definite amount daily without being rejected. Many children, however, apart from vomiting, show a great distaste for it. In many cases it is best given as symptoms arise indicating its need. Since it is often necessary to give it quickly, I think it wise to allow an experienced nurse to give it on her own initiative and to inform the medical attendant of this later. Champagne can be taken in some cases where brandy is rejected.

II.—NASAL FEEDING.

The following conditions render nasal feeding advisable: (1) inability to swallow from regurgitation, paralysis of muscles of deglutition, &c.; (2) coughing on feeding, due to entrance of food into the larynx, and this especially in tracheotomy cases; (3) cases which vomit when fed by the mouth, but do not when fed through the nose; (4) cases exhausted by mouth feeding, but not when nasal-fed (amongst these must be numbered cases in which mouth feeding takes a very long time); and (5) moral effect. These suggestions apply to children who refuse food though well able to swallow. One nasal feed is often sufficient.

As a rule nasal feeding can be performed with a soft rubber tube, but occasionally a stiff tube is necessary. Generally the patient should be fed every four hours, but this must to a certain extent depend on the individual case. Milk, if necessary peptonised or as Benger's food, should be the chief ingredient. Raw meat juice, eggs, cream, brandy (if ordered), or medicines may be added to the diet. The quantity in each meal must vary with the age, size, &c., of the patient. About four ounces is often as much as a child of from three to five years old will be able to retain and to absorb. Even this may have to be reduced. All foods should be strained, measured, and given warm. If vomiting occur it may be due to the amount or contents of the meal or to the frequency of administration. All these details can be variously modified. The amount may be diminished, the frequency lessened, or some constituent which is supposed to be the cause of vomiting altered or omitted. If, however, the vomiting persist rectal alimentation must be tried in lieu of nasal feeding. It is worth noting that after the first few nasal feeds feeding by this method as a rule becomes remarkably easy owing to the effect of habit and in some cases to actual loss of sensation.

III.—RECTAL ALIMENTATION.

This should be resorted to when feeding by the mouth or nose fails or is insufficient. The following are the chief conditions where it is required: (1) vomiting; (2) great difficulty in passing the nasal tube from various causes; (3) when nasal feeding acts harmfully on the patient, owing to fright, struggling, or other cause; and (4) epistaxis caused by passage of the nasal tube.

Rectal feeding should be performed by means of a funnel and soft rubber tube, passed as high up the rectum as possible, and the feed allowed to flow in by force of gravity. A ball syringe should not be used, for it is impossible to gauge accurately the amount of pressure used; experience also shows that nutrients given this way are not so well retained. The feeds should be given warm about every four hours. They should be measured and strained. The amount of the feed should depend on the age, &c., of the patient. In young children it varies from two to four ounces and has to depend on the amount retained and absorbed. The feeds should have as their basis peptonised milk, and often this is their only constituent. Raw meat juice, white of eggs, and occasionally yelks of eggs are added. In some cases brandy is added and tolerated for a long-continued period. Often, however, probably owing to its irritating the

TABLE SHOWING THE AMOUNT AND NATURE OF FOOD, &c., RETAINED (APPROXIMATELY) IN CASE 1.

Date.	By mouth.	Nasal feeding.	Rectal feeding.	Injections of horse serum.	Remarks.
Feb. 19th.	Milk,* 8 oz.; brandy, 2 drachms.	—	—	—	Antitoxin, 18,000 units.
,, 20th.	Milk,* 31 oz.; brandy, 11 drachms; eggs, 2.	—	—	—	Antitoxin, 12,000 units.
,, 21st.	Milk,* 33 oz.; brandy, 13 drachms; 1 egg.	—	—	—	Antitoxin, 12,000 units.
,, 22nd.	Milk,* 33 oz.; brandy, 14 drachms; eggs, 2; raw meat juice,† 4 drachms.	—	—	—	—
,, 23rd.	Milk,* 33 oz.; brandy, 8 drachms; eggs, 2; raw meat juice, 14 drachms.	—	—	—	—
,, 24th.	Milk,* 19 oz.; brandy, 8 drachms; 1 egg; raw meat juice (amount not noted); cocoa, 4 oz.	—	—	—	—
,, 25th.	Milk,* 32 oz.; brandy, 15 drachms; half an egg; raw meat juice, 6 drachms.	—	—	—	Vomited three times.
,, 26th.	Milk,* 35 oz.; brandy, 15 drachms; eggs, 1½; raw meat juice, 19 drachms.	—	—	—	No vomiting.
,, 27th.	Milk,* 28 oz.; brandy, 12 drachms; 1 egg; coffee, 1 oz.	—	—	—	Vomited twice.
,, 28th.	Milk,* 12 oz.; brandy, 10 drachms; coffee, 4 oz.	—	Peptonised milk, 8 oz.; brandy, 5 drachms.	—	Vomited twice. Mouth feeding omitted. Ordered rectal feeding: 4 oz. peptonised milk and ½ oz. brandy four-hourly.
March 1st.	*Nil.*	—	Peptonised milk, 24 oz.; brandy, 18 drachms; water, 8 oz.	—	Vomited twice;† ordered 4-oz. water feeds in addition.
,, 2nd.	*Nil.*	—	Peptonised milk, 24 oz.; brandy, 3 oz; water, 1 pint.	—	Vomited twice.
,, 3rd.		—	Peptonised milk, 20 oz.; brandy, 2½ oz.; water, 1 pint.	—	Vomited five times; returned one feed.
,, 4th.		—	Peptonised milk, 24 oz.; brandy, 3 oz.; water, 1 pint.	—	Vomited six times.
,, 5th.		—	Peptonised milk, 20 oz.; brandy, 2½ oz.; water, 1 pint	20 c.c.	No vomiting; returned one feed.
,, 6th.		—	Peptonised milk, 24 oz.; brandy, 3 oz.; water, 1 pint.	20 c.c.	No vomiting.
,, 7th.		—	Peptonised milk, 24 oz.; brandy, 3 oz.; water, 1 pint.	20 c.c.	No vomiting.
,, 8th.		—	Peptonised milk, 24 oz.; brandy, 3 oz.; water, 1 pint.	20 c.c.	No vomiting.
,, 9th.		—	Peptonised milk, 24 oz.; brandy, 3 oz.; water, 1 pint.	—	No vomiting.
,, 10th.		—	Peptonised milk, 24 oz.; brandy, 3 oz.; water, 1 pint.	—	Vomited four times.
,, 11th.		—	Peptonised milk, 24 oz.; brandy, 3 oz.; water, 1 pint.	—	Vomited four times; brandy decreased to 2 drachms each feed.
,, 12th.	During this period, owing partly to great craving for food, the patient was tried by mouth with very small amounts of nourishment or water but with no effect. Practically everything was vomited.	—	Peptonised milk, 24 oz.; brandy, 1½ oz.; water, 24 oz.	20 c.c.	Vomited six times.
,, 13th.		—	Peptonised milk, 24 oz.; brandy, 1½ oz.; water, 1 pint.	—	Vomited four times.
,, 14th.		—	Peptonised milk, 24 oz.; brandy, 1½ oz.; water, 1 pint.	20 c.c.	Vomited twice.
,, 15th.		—	Peptonised milk, 20 oz.; brandy, 1½ oz.; water, 1 pint.	—	Vomited five times; returned one feed.
,, 16th.		—	Peptonised milk, 16 oz.; brandy, 1 oz.; water, 16 oz.	20 c.c.	Vomited several times; returned two feeds.
,, 17th.		—	Peptonised milk, 20 oz.; brandy, 1½ oz.; water, 1 pint.	20 c.c.	Vomited once; returned one feed.
,, 18th.		—	Peptonised milk, 20 oz.; brandy, 1½ oz.; water, 1 pint.	20 c.c.	Vomited twice; returned one feed.
,, 19th.		—	Peptonised milk, 24 oz.; brandy, 1½ oz.; water, 16 oz.	20 c.c.	Vomited three times.
,, 20th.		—	Peptonised milk, 24 oz.; brandy, 1½ oz.; water, 16 oz.	20 c.c.	Vomited three times.
,, 21st.		—	Peptonised milk, 24 oz.; brandy, 1½ oz.; water, 16 oz.	20 c.c.	Vomited twice.
,, 22nd.		—	Peptonised milk, 24 oz.; brandy, 1½ oz.; water, 16 oz.	—	—
,, 23rd.		—	Peptonised milk, 24 oz.; brandy, 1½ oz.; water, 16 oz.	20 c.c.	—
,, 24th.		—	Peptonised milk, 24 oz.; brandy, 1½ oz.; water, 16 oz.	15 c.c.	—
,, 25th.		—	Peptonised milk, 24 oz.; brandy, 1½ oz.; water, 16 oz.	20 c.c.	—
,, 26th.		—	Peptonised milk, 24 oz.; brandy, 1½ oz.; water, 16 oz.	—	—
,, 27th.		—	Peptonised milk, 24 oz.; brandy, 2 oz.; water, 16 oz.	20 c.c.	—

TABLE SHOWING THE AMOUNT AND NATURE OF FOOD, &c., RETAINED (APPROXIMATELY) IN CASE I.—(*Continued*).

Date.	By mouth.	Nasal feeding.	Rectal feeding.	Injections of horse serum.	Remarks.
March 28th.	Peptonised milk, 6½ oz.	—	Peptonised milk, 24 oz.; brandy, 1½ oz.; water 16 oz.	—	Vomited three times. The milk by mouth was given mostly after the vomiting.
,, 29th.	Peptonised milk, 10 oz.; Benger's food, 2 oz.	—	Peptonised milk, 24 oz.; brandy, 1½ oz.; water, 16 oz.	—	No further vomiting. Coughed on mouth feeding.
,, 30th.	Peptonised milk, 6 oz.; Benger's food, 2 oz.; milk jelly, 1½ oz.	—	Peptonised milk, 24 oz.; brandy, 1½ oz.; water, 20 oz.	—	Regurgitation.
,, 31st.	Peptonised milk, 4 oz.; milk jelly, 2½ oz.	—	Peptonised milk, 24 oz.; brandy, 1½ oz.; water, 16 oz.	—	—
April 1st.	Peptonised milk, 1½ oz.; milk jelly, 2 oz.; 1 egg.	—	Peptonised milk, 24 oz.; brandy, 1½ oz.; water, 16 oz.	—	—
,, 2nd.	Peptonised milk, 2 oz.; milk jelly, 1½ oz.; 1 egg.	—	Peptonised milk, 24 oz.; brandy, 1½ oz.; water, 16 oz.	—	—
,, 3rd.	Peptonised milk, 3 oz.; half an egg.	—	Peptonised milk, 24 oz.; brandy, 1½ oz.; water, 16 oz.	—	—
,, 4th.	Peptonised milk, 3 oz.	—	Peptonised milk, 24 oz.; brandy, 1½ oz.; water, 16 oz.	—	Unable to swallow, April 5th.
,, 5th.		Peptonised milk, 3 oz.	Peptonised milk, 24 oz.; brandy, 1½ oz.; water, 16 oz.	—	Ordered nasal feeds; 3 oz. of peptonised milk six-hourly.
,, 6th.		,, ,, 12 oz.	Peptonised milk, 20 oz.; brandy, 1½ oz.; water, 16 oz.	—	Returned one feed (rectal).
,, 7th.		,, ,, 13 oz.	Peptonised milk, 24 oz.; brandy, 1½ oz.; water, 16 oz.	—	Nasal feeds increased to 4 oz. of peptonised milk.
,, 8th.		,, ,, 16 oz.	Peptonised milk, 24 oz.; brandy, 1½ oz.; water, 16 oz.	—	—
,, 9th.		,, ,, 16 oz.	Peptonised milk, 24 oz.; brandy, 1½ oz.; water, 16 oz.	—	½ oz. of cream added to each nasal feed.
,, 10th.		Peptonised milk, 16 oz.; cream, 3 oz.	Peptonised milk, 24 oz.; brandy, 1½ oz.; water, 16 oz.	—	—
,, 11th.		Peptonised milk, 16 oz.; cream, 3 oz.	Peptonised milk, 24 oz.; brandy, 1½ oz.; water, 14 oz.	—	—
,, 12th.		Peptonised milk, 16 oz.; cream, 3 oz.	Peptonised milk, 24 oz.; brandy, 1½ oz.; water, 14 oz.	—	—
,, 13th.		Peptonised milk, 16 oz.; cream, 3 oz.	Peptonised milk, 24 oz.; brandy, 1½ oz.; water, 14 oz.	—	Water bed ordered; patient very thin.
,, 14th.		Peptonised milk, 16 oz.; cream, 3 oz.	Peptonised milk, 24 oz.; brandy, 1½ oz.; water, 16 oz.	—	—
,, 15th.		Peptonised milk, 16 oz.; cream, 3 oz.	Peptonised milk, 24 oz.; brandy, 1½ oz.; water, 16 oz.	—	—
,, 16th.		Peptonised milk, 16 oz.; cream, 3 oz.	Peptonised milk, 24 oz.; brandy, 1½ oz.; water, 16 oz.	—	—
,, 17th.		Peptonised milk, 16 oz.; cream, 3 oz.	Peptonised milk, 24 oz.; brandy, 1½ oz.; water, 16 oz.	—	—
,, 18th.	*Nil.*	Peptonised milk, 16 oz; cream, 3 oz.	Peptonised milk, 24 oz.; brandy, 1½ oz.; water, 16 oz.	—	—
,, 19th.		Peptonised milk, 16 oz.; cream, 3 oz.	Peptonised milk, 24 oz.; brandy, 1½ oz.; water, 16 oz.	—	—
,, 20th.		Peptonised milk, 16 oz.; cream, 3 oz.; brandy, 1 oz.	Peptonised milk 16 oz.; water, 12 oz.	—	Returned two rectal feeds; brandy omitted from rectal feeds; 3 drachms of brandy ordered to each nasal feed.
,, 21st.		Peptonised milk, 16 oz.; cream, 3 oz.; brandy, 1½ oz.	Peptonised milk, 24 oz.; water, 12 oz.	—	—
,, 22nd.		Peptonised milk, 12 + oz.; cream, 2½ oz.; brandy, 1½ oz.	Peptonised milk, 20 oz.; water, 14 oz.	—	Vomited part of one nasal feed; returned one rectal feed.
,, 23rd.		Peptonised milk, 16 oz.; cream, 3 oz.; brandy, 1½ oz.	Peptonised milk, 20 oz.; water, 14 oz.	—	Returned one rectal feed.
,, 24th.		Peptonised milk, 16 oz.; cream, 3 oz.; brandy. 1½ oz.	Peptonised milk, 24 oz.; water, 14 oz.	—	Returned one nasal feed at once; had another later.
,, 25th.		Peptonised milk, 16 oz.; cream, 3 oz; brandy, 1½ oz.	Peptonised milk, 24 oz.; water, 14 oz.	—	—
,, 26th.		Peptonised milk, 16 oz.; cream, 3 oz.; brandy, 1½ oz.	Peptonised milk, 24 oz.; water, 14 oz.	—	—
,, 27th.		Peptonised milk, 12 oz.; cream, 2½ oz.; brandy, 1½ oz.	Peptonised milk, 20 oz.; water, 14 oz.; brandy, 3 drachms.	—	Returned one rectal feed; vomited twice after nasal feeds, once very slightly.
,, 28th.		Peptonised milk, 16 oz.; cream, 3 oz.; brandy, 1½ oz.	Peptonised milk, 24 oz.; water, 12 oz.	—	Retched after the nasal feed; no vomiting.
,, 29th.		Peptonised milk, 16 oz.; cream, 3 oz.; brandy, 1½ oz.	Peptonised milk, 24 oz.; water, 12 oz.	—	—
,, 30th.	Five fingers of toast.	Peptonised milk, 16 oz.; cream, 2 oz.; brandy, 1½ oz.	Peptonised milk, 24 oz.; water, 12 oz.	—	—
May 1st.	Two fingers of toast.	Peptonised milk, 12 + oz.; cream, 2½ oz.; brandy, 1½ oz.	Peptonised milk, 20 oz.; water, 12 oz.;	—	Two feeds omitted by rectum; part of one nasal feed vomited.
,, 2nd.	Toast, 1 egg; mince and potatoes; Benger's food, 1 oz.	Peptonised milk, 12 − oz.; cream, 3 − oz.; brandy, 1½ oz.	Peptonised milk, 12 oz.; water, 10 oz.	—	Rectal feeding omitted; one nasal feed ½ omitted; vomited part of one nasal feed; vomited a little of dinner.

TABLE SHOWING THE AMOUNT AND NATURE OF FOOD, &c., RETAINED (APPROXIMATELY) IN CASE 1.—(*Continued*).

Date.	By mouth.	Nasal feeding.	Rectal feeding.	Injections of horse serum.	Remarks.
May 3rd.	Toast, bread and butter, 2 eggs, milk jelly, mince and potatoes.	Peptonised milk, 12 oz.; cream, 3 oz.; brandy, 1½ oz.	—	—	Vomited part of one nasal feed.
,, 4th.	Bread and butter, fish and potatoes, 2 eggs.	Peptonised milk, 12 oz.; cream, ½ oz.; brandy, 1½ oz.	—	—	—
,, 5th.	Bread-and-butter, fish and potatoes, 2 eggs.	Peptonised milk, 12 oz.; cream, 3 oz., brandy, 1½ oz.	—	—	—
,, 6th.	Bread and butter, fish and potatoes, 2 eggs, milk pudding.	Peptonised milk, 12 oz.; cream, 3 oz.; brandy, 1½ oz.	—	—	—
,, 7th.	Bread-and-butter, fish and potatoes, 2 eggs, milk pudding.	Peptonised milk, 8 oz.; cream, 2 oz.; brandy, 1 oz.	—	—	Vomited whilst one feed was given.
,, 8th.	Bread-and-butter, fish and potatoes, 2 eggs, milk pudding.	Peptonised milk, 12 oz.; cream, 3 oz.; brandy, 1½ oz.	—	—	—
,, 9th.	Bread-and-butter, chicken and potatoes, 2 eggs, milk pudding.	Peptonised milk, 12 oz.; cream, 3 oz.	—	—	Brandy omitted from nasal feeds.
,, 10th.	Bread-and-butter, chicken and potatoes, 2 eggs, milk pudding.	Peptonised milk, 12 oz.; cream, 3 oz.	—	—	Vomited once.
,, 11th.	Bread-and-butter, chicken, milk pudding, 2 eggs, 4 milk biscuits.	Peptonised milk, 12 oz.; cream, 3 oz.	—	—	—
,, 12th.	Bread-and-butter, chicken, milk pudding, 1 egg, 4 milk biscuits.	Peptonised milk, 12 oz.; cream, 3 oz.	—	—	
,, 13th.	Bread-and-butter, chicken, milk pudding, 2 eggs, 4 milk biscuits.	Peptonised milk, 12 oz.; cream, 3 oz.	—	—	Vomited part of dinner; great difficulty in swallowing fluids till this date.
,, 14th.	Diet the same and in addition 3 oz. of peptonised milk.	Peptonised milk, 12 oz.; cream, 3 oz.	—	—	—
,, 15th.	Diet the same and in addition 4 oz. of peptonised milk.	Peptonised milk, 12 oz.; cream, 3 oz.	—	—	—
,, 16th.	Diet the same and in addition 4 raw meat sandwiches.	Peptonised milk, 12 oz.; cream, 3 oz.	—	—	—
,, 17th.	Milk, 1½ pints; cream, 1 oz.; chicken; biscuits; bread-and-butter; eggs; 6 raw meat sandwiches.	Peptonised milk, 12 oz.; cream, 3 oz.	—	—	Vomited once.
,, 18th.	Milk, 1½ pints; cream, 1 oz.; chicken; biscuits; bread-and-butter; 2 eggs; 6 raw meat sandwiches.	Peptonised milk, 12 oz.; cream, 3 oz.	—	—	Nasal feeding ordered to be omitted. The patient after the 18th soon got back to an ordinary but generous diet.

* The milk was diluted by addition of barley-water. † Made from raw steak; 1 lb. allowed daily.
‡ One water feed omitted daily to allow bowel to be washed out.
§ Same amount of cream and brandy given in the 24 hours.

rectal mucous membrane, it is apt to set up diarrhœa. Sometimes it may be ordered to be given apart from the nutrient feeds and diluted with water when symptoms show themselves suggesting its use. The milk feeds should be preceded by water feeds of three or four ounces of warm water, given in the same manner as the milk feeds, about an hour before these feeds are given. Sometimes in addition to the milk-and-water feeds small nutrient suppositories may be given provided they are retained and absorbed. The bowel should be washed out every 24 hours and it is possible from this to get some idea as to whether the food given has been absorbed. I do not think large rectal feeds are advisable as they are apt to set up diarrhœa. Diarrhœa is a troublesome and serious complication in these cases, for rectal alimentation has to be depended on to support life over far longer periods than is usually supposed possible. Thus it is not uncommon for cases to be fed by the rectum alone for three weeks, and cases occur where rectal feeding has to be continued over four or five weeks and even seven weeks. If the feeds are not retained or only retained in part their amount should be diminished, or they should be given less frequently, or some part of the feed should be omitted—e.g., brandy. Sometimes washing out the bowel and giving it a rest is useful. The water feeds may be badly retained; they also may have to be diminished in quantity or given less frequently. If these means fail, a starch or a starch-and-opium enema containing a few drops of tincture of opium will often be found useful. During the period of abstinence from food by the stomach patients have a great craving for food, often of the most varied kind. They are tried by mouth with water, raw meat-juice, peptonised milk in drachm doses. Occasionally, owing greatly to their craving, they are tried with a morsel of thin bread-and-butter, &c., but, as a rule, it is rejected by the stomach.

IV.—SUBCUTANEOUS INJECTIONS.

In addition to the above forms of administering food the injection of sterile horse serum into the subcutaneous tissues is to be recommended.[1] Dr. F. E. Laslett has also advocated saline infusions.[2] Horse serum should be used when the amount of nourishment taken by stomach or rectum, or both, appear to be insufficient to support life. Sometimes it is used as the only means of feeding patients owing to continued vomiting and diarrhœa. It should be injected into the loose subcutaneous tissues of the trunk. If given over a prolonged period, I think from 20 to 40 cubic centimetres are often as much as it is advisable to inject daily. As a rule, patients submit to its injection well and I have occasionally noticed that children have been injected without any untoward effect who have become cyanosed on attempting to nasal-feed. As far as I know the only indication against the use of these injections is hæmorrhage into the subcutaneous tissues adjoining the site of injection. I have, however, seen no dangerous effects from its use, either from these

[1] See Action of Normal Serum upon the Animal Economy, by A. Salter, M.D., &c., Guy's Hospital Reports, vol. liii., 1896.
[2] THE LANCET, Oct. 20th, 1900, p. 1131.

hæmorrhages or other causes. Transient rashes have occasionally been observed after its use. It is impossible to speak dogmatically as to its value, for in all cases, as far as possible, where it is given, nourishment is also introduced by other channels. However, if it is absorbed the patient has had so much added nourishment, and this is of great importance where one's resources are so taxed in feeding. Some nurses have thought that patients are more restful after the injections, and that in cases which are constantly retching and vomiting these symptoms have been less marked. My own impression is that the injections of horse serum have been beneficial.

CONCLUDING REMARKS.

Patients who have been fed by the rectum for some weeks become extremely emaciated and not infrequently develop petechial hæmorrhages, generally in the trunk, and they may be profuse. So far I have made little or no reference to drugs. My experience of most if not all as regards their action in the vomiting of diphtheria has been uniformly disappointing. I have spoken separately of the various modes of feeding. In practice, however, they are frequently combined. I am much indebted to the nurses, who have supplied me with careful notes, and whose advice in many practical details of the different methods of feeding has been of much value. I append notes of a few cases, one *in extenso*, specially with reference to their feeding.

CASE 1.—The patient, aged six years, was admitted to Brook Hospital on Feb. 19th, 1900, and was discharged on July 13th, 1900. The patient was admitted on the third day of the disease, with very severe faucial diphtheria. The heart was affected early. Epistaxis occurred on the fifth day. Albumin was seen from the seventh to the thirty-eighth day. Vomiting commenced on the seventh day. There were paralysis, nasal voice, regurgitation, diaphragmatic paralysis, labial paralysis, paralysis of deglutition, and general limpness. The accompanying table shows the approximate amount and nature of food, &c., retained.

CASE 2.—The patient, aged six years, was admitted to Brook Hospital on Sept. 14th, 1899, and was discharged on Feb. 8th, 1900. The patient was suffering from severe faucial diphtheria and was admitted on the third day of the disease. There were albuminuria, palatal paralysis, and diaphragmatic paralysis. Vomiting started on the fifteenth day and ceased about the forty-third day. 10,000 units of antitoxin were given on the third day of the disease, and 12,000 units of antitoxin were given on the fourth day of the disease. On the twelfth day, owing to retching, peptonised milk only was ordered by the mouth. On the sixteenth day rectal feeding alone was ordered. The feeds, consisting of four ounces of peptonised milk and half an ounce of brandy, were ordered to be given every four hours. In addition, water feeds of four ounces were ordered one hour before the milk feeds. On the seventeenth day milk enules (containing peptone from five drachms milk) were ordered four-hourly. On the twentieth day, owing to the feeds being badly retained, the brandy was omitted from each feed and the quantity of milk was reduced to three ounces. On the twenty-second day the milk feeds were further reduced to two and a half ounces each feed. At the same time only three water feeds were given in the 24 hours; but the milk enules were continued every four hours. These rectal feeds were continued till the thirty-sixth day. On the twenty-ninth and thirtieth days a starch and opium enema was required. Twenty cubic centimetres of horse serum were injected on the twentieth, twenty-first, twenty-second, twenty-third, twenty-fourth, twenty-fifth, twenty-sixth, twenty-seventh, and twenty-eighth days. The last two gave rise to subcutaneous hæmorrhage. From the thirty-first to the thirty-sixth day the patient took a small but appreciable amount of food by the mouth. From the thirty-sixth to the fiftieth day the patient was nasal-fed, but each day had in addition by the mouth one or two eggs and some bread crumbs. After the fiftieth day the patient gradually got back to a normal diet.

CASE 3.—This patient, aged five years, was admitted to Brook Hospital on Nov. 8th, 1900, suffering from severe faucial diphtheria, it being the fifth day of the disease. Albuminuria was present from the time of admission to the thirty-third day. Vomiting commenced on the eighth day and did not cease entirely till the sixtieth day of the disease. Palatal paralysis was first noticed on the seventeenth day. 12,000 units of antitoxin were given on the fifth day and 12,000 units of antitoxin were given on the sixth day. Rectal feeds were ordered first on the twelfth day, consisting of three ounces of peptonised milk and half an ounce of brandy, given four-hourly. On the thirteenth day the milk was increased to four ounces each feed. On the nineteenth day the brandy was diminished to two ounces divided over the rectal feeds given in 24 hours. Three-ounce water feeds were also ordered one hour before the milk-and-brandy feeds. The rectal feeds were omitted on the fifty-seventh day. Nasal feeds, consisting of one ounce of peptonised milk, one drachm of raw meat juice, and one drachm of brandy, were first ordered four-hourly on the fifty-fifth day. On the fifty-sixth day the milk was increased to two ounces each feed. On the fifty-seventh day the nasal feeds were increased to three ounces of peptonised milk, one drachm of meat juice, and three drachms of brandy. On the sixty-fourth day the patient began to feed by the mouth. On the seventy-second day the nasal feeds were increased to five ounces of peptonised milk; the brandy was omitted. These were given three times a day. On the eighty-first day they were omitted, and from that date the child gradually got back to an ordinary diet. From the twelfth to the fifty-fifth day the patient was fed almost entirely by the rectum. On the fifteenth, twenty-fourth, and thirty-ninth day 20 cubic centimetres of horse serum were injected as she was then retaining her feeds badly. The child had a great craving for food and was occasionally tried with it in minute quantities, but mostly it was rejected by vomiting, until the fifty-sixth day. On the thirty-sixth day one nasal feed was tried, but this was vomited, and for some days the vomiting was increased.

CASE 4.—The patient, aged five years, was admitted to Brook Hospital on Jan. 14th, 1899, suffering from faucial diphtheria and was discharged on June 1st, 1899. On June 16th there was vomiting. Peptonised milk was ordered and brandy one ounce in the 24 hours. On the 17th the vomiting stopped. The patient then did well and was on a fish diet on Jan. 22nd and on child's diet on Feb. 3rd. On March 1st the child collapsed in the morning and vomiting occurred. Half an ounce of brandy was given by the rectum. Mouth feeding was omitted and the child was ordered four-hourly rectal feeds, each feed consisting of four ounces of peptonised milk and half an ounce of brandy. Water feeds of from three to four ounces were given one hour before the milk feeds. On March 2nd the yelk of half an egg was added to each milk feed. On the 25th there were punctiform hæmorrhages in the body. On April 3rd brandy only was given in alternate feeds. On the 4th the patient commenced to take food by the mouth for the first time since March 1st. On the 10th two rectal feeds were omitted. On the 12th rectal feeds were omitted. In this case the child was fed by the rectum alone from March 1st to April 4th, a period of five weeks.

Shooters Hill, Kent.

SCARLATINAL INFECTION: AN INQUIRY AND AN ILLUSTRATION.

BY J. B. PIKE, M.R.C.S. ENG., L.R.C.P. EDIN.

THE pathogenic germ of scarlet fever appears to require moisture for its development, and, this being the case, it seems somewhat strange that dry exfoliated epidermis should have received so much credit as the potential in scarlatinal infection. Latterly more attention has been paid to nasal discharge, and I believe pus from the middle-ear is also suspected. This being granted the question arises, How long can these discharges convey specific scarlatinal infection? Can scarlet fever microbes lurk insidiously in hiding? Certainly the middle-ear and mastoid cells form excellent quarters for the secret dwelling, if the germs can lie there quietly, without resentment of the tissues. If they can do so for a long or indefinite time we must enlarge our view of the infective period of scarlet fever. Isolation can hardly be indefinite, but if we recognise an ear discharge occurring even a year or more after scarlet fever as possibly or probably infectious something may be done to prevent the spread of the disease.

Another interesting question which is suggested by the following illustrative case is this, Is a secondary auto-infection possible from scarlatinal poison lurking in the cavities of the temporal bone? I cannot pretend by one

case to answer these questions, but I think the following notes illustrate the inquiry, and subsequent observation may possibly throw more light upon the matter.

A girl, aged 14 years, was isolated, together with one of her sisters, for scarlet fever on Jan. 5th, 1898. She was about again on Feb. 24th and appeared to regain her normal health. On Sept. 27th, 1899, she was attacked by sore-throat followed by earache. I saw her first with regard to this illness on Oct. 14th, 1899, when she was suffering a good deal from the ear, a discharge having been noticed from the meatus for about a week. On Oct. 17th the ear was very troublesome and there was some puffiness over the mastoid. She was also showing symptoms of acute nephritis. It was arranged to make Wilde's incision the next day. On the 18th, however, an older sister developed scarlet fever, and this occurred without our being able to trace any outside infection. My patient was consequently moved to a private ward at the Loughborough Hospital and on the same day an incision was made. A superficial necrosis of the mastoid was found which was removed together with a part of the posterior wall of the meatus. The operation was made as short as possible as prolonged anæsthesia was undesirable with the acute kidney condition. In its subsequent progress the case gave rise to much anxiety. For some time there was high temperature, rising at night or early morning to from 103° to 105° F., and it was difficult to determine how much this was due to mastoid trouble and how much to nephritis. On this point I had the advantage of consultations with Mr. Bond of Leicester and Dr. Howarth of Derby, and the decision was not to interfere further with the mastoid unless there was an extension of local symptoms. Ultimately all symptoms of active mischief subsided, the incision healing and the urine becoming free from casts and albumin. The patient went home convalescent on Dec. 6th, 1899.

The points illustrative of the previous inquiry are, first, the infection of the older sister, and secondly, the sore-throat followed by nephritis and associated with mastoid and middle-ear trouble, which had been for some time latent. Apart from these points the case is interesting as an example of nephritis associated with mastoid necrosis and simulating septicæmia.

Loughborough.

PURE UREA IN THE TREATMENT OF TUBERCULOSIS.

BY HENRY HARPER, M.D. R.U.I.

IN THE LANCET of March 9th, 1901, I was permitted to place on record my experience of pure urea in the treatment of tuberculosis. The subject is so vast, the problems in physiology are so great and many-sided, the whole matter is so closely connected with organo-therapy, and the possibilities are so far-reaching, that I once more venture to record my further experience of urea. I selected urea, a substance of known chemical composition, from amongst its congeners, the "great end-products of nitrogenous metabolism," as an antitoxin for the tubercle bacillus. Hitherto urea has been looked upon as a waste product of the body of no further use in the economy—in fact, just as coal-tar used to be previously to the discovery of the aniline dyes it was found to contain.

My opinion is that urea is a constructor or builder up when administered in tuberculosis. This view is forced upon me by the frequent expressions of patients stating that they feel so much improved since eating kidney, liver, or brain—all substances rich in urea—in conjunction with urea ingested by the mouth. A few chronic phthisical patients have stated that these substances acted like a stimulant on them. Urea props up and holds together the tuberculous subject better than any other substance with which I am acquainted.

From my investigations among many families subject to gout and its allied diseases, including all forms of calculi except phosphatic, I am persuaded there is antagonism between these diseases and tuberculosis, and that this class of patients possesses a natural antitoxin against the bacillus. Here it is worthy of note that nuclein, which is used as a remedy in tuberculosis, in certain blood diseases accompanied by leucocytosis splits up and forms uric acid. "The discovery of the linking-on of toxin to proteid bodies and the assimilation by the cells, with the consequent appearance of anti-bodies, was one of the most remarkable contributions to the knowledge of immunity that had yet been made."[1] "A molecule of proteid, hitherto dead, coming within the grasp of the molecular forces of the living substance, is caught up by it and, as we phrase it, made alive."[2] Probably this is how urea acts when ingested by the tuberculous.

CASE 1.—A man, aged 25 years, a tailor, came under my care on Dec. 21st, 1900. He had been very ill for 10 months with cough, sputum, loss of flesh (1½ stones), and night sweats; his evening temperature was 101·5° F. There was much dyspnœa on exertion and he had a poor appetite. No hæmoptysis was present. The patient looked very thin and far advanced in phthisis. Physical examination revealed much damage to the right lung; percussion was dull; there were loud crackling sounds denoting rapid softening of the upper half of this organ; the sputum contained many bacilli; the prognosis was very unfavourable. The grave nature of his disease was explained to the patient and his aid was besought in carrying out the treatment. He was ordered to live outdoors nearly all the day and to eat four good meals daily, each meal containing plenty of animal food. He ate daily one well-cooked kidney or an equal weight of liver, calf's or sheep's brain. He was told that these things were given to him as a medicine and he took them willingly. Along with this pure urea in 20-grain doses four times daily in separate mixture was taken. After meals a mixture of hydrochloric acid, strychnia, and pepsine was taken as well to aid digestion; also half an ounce of cod-liver oil daily with breakfast. The patient soon expressed himself feeling better, gaining weight and strength, the cough and sputum lessening. Now he says he is quite well, his weight being only four pounds below what it was at the begining of his illness. The sputum still contains bacilli.

CASE 2.—A man, aged 38 years, came under my care on Feb. 28th, 1900. For many years he had been a carter. During the last three years he had kept a public-house and for a number of years had been a big beer-drinker. Two years previously his health began to fail, as manifested by repeated "bilious bouts." Slowly, shortness of breath and cough came on with rapid loss of flesh. He had several attacks of pulmonary hæmorrhage. When first seen by me he had been confined to his bed for 16 weeks, being nursed up in a warm room and afraid to have the door opened. He had all the appearance of long-standing wasting disease, including the clubbed finger-nails. There were daily hectic, anorexia, and very frequent cough, with much sputum crowded with bacilli. The physical signs revealed a cavity at the left apex with loud cavernous râles and fine crepitation at the margin of infiltration with the sound lung. The heart sounds were feeble; the liver was distinctly enlarged. The patient was ordered out of bed and changed his room during the day. He was put on a light nutritious diet, including milk, fish, and mutton. A mixture of hydrochloric acid and strychnia, with pepsine, was taken after meals, the same as in Case 1; 20 grains of pure urea dissolved in water with half-minim doses of creasote in combination were taken soon after food thrice daily. On this treatment the patient soon showed improvement. Less cough and better appetite followed within a week; two weeks later he was able to go out for carriage drives. On April 1st he was able to walk freely and he had gained four pounds in weight. From this time onward improvement was more rapid. With the view of increasing the urea in the food ingested he ate daily one well-cooked kidney or an equal bulk of liver or brain-substance. The importance of these things as a medicine for his disease was explained to him and he ate them willingly. He has recovered so much that he is able to do work, including grooming his own horse, and drives about freely now. His worst trouble is dyspnœa on exertion. He has very little cough or sputum. Bacilli are sometimes present, more frequently absent.

CASE 3.—A man, aged 51 years, a stonemason, came under my care on June 20th, 1900. He had not been strong for several years and had been ailing 18 months with "bad cold," but was not laid up in bed; increased cough and more sputum followed. Since Christmas he had become much worse with more cough and dyspnœa. He had several attacks of hæmoptysis and marked laryngitis for one month; he had lost 1 stone in weight during the last six

[1] Brit. Med. Jour., March 16th, 1901.
[2] Stewart's Physiology.

months. On examination the patient presented all the symptoms of stonemason's phthisis; he had a thin, wasted body with bad thoracic movements, hyper-resonance over the lungs, except at the right apex which revealed a cavity with marked metallic tinkling on deep inspiration. There were signs of many foci of tuberculosis in both lungs, areas of fine crepitation with coarse rough râles all scattered over. The sputum was full of peculiar short stumpy bacilli. A diagnosis of pulmonary and laryngeal tuberculosis was made. The prognosis was grave.

The treatment consisted of the following. He was put on very nutritious food; as much fresh butcher's meat as possible was consumed, with eggs, milk, cream, and one good portion of well-cooked green vegetables daily. One kidney well cooked or an equal weight of fresh liver daily was consumed with some one of the meals, usually the breakfast. He lived in the open country in the hilly part of Derbyshire and spent his time almost entirely out of doors. He practised with light dumb-bells every day and did some light gardening. 20 grains of pure urea dissolved in water with half-minim doses of creasote suspended in a little mucilage were administered four times daily after the principal meals; also one ounce three times a day of the following mixture: 24 grains of sulphate of iron, 30 grains of carbonate of potassium, one and a half drachms of powdered myrrh, one and a half drachms of powdered glycyrrhiza, 12 minims of creasote, and water to 12 ounces were the medicines ordered. "Perfected" cod-liver oil or bynol was taken fairly regularly once a day with the food. The patient slowly but steadily improved, from the first gaining strength and suffering less; now he has regained his weight. The laryngitis is almost gone. There is very little cough or sputum; the latter still contains bacilli. Except for dyspnœa he considers himself fairly well.

CASE 4.—A boy, aged 16 years, employed at the telephone office, came under my notice on Nov. 11th, 1900. There was no history of tuberculosis in the family. He had been ill for two months. He was weak, losing flesh, and easily getting colds; during the last three weeks he had been much worse, with feverishness, night sweats, an evening temperature of 101·5° F., loss of flesh, very marked dyspnœa, and no hæmoptysis. A large quantity of yellow sputum was expectorated every morning which showed bacillus in abundance. The diagnosis of tuberculosis of the right base of the lung was made. The boy was sent into the country and ordered to eat plenty of all kinds of animal food, including kidney, liver, and brain. He spent the greatest portion of the day out-of-doors, knocking about actively, doing cycling, a little football, and dumb-bell exercise. 20 grains of urea, four times daily, with compound mixture of iron as above in separate mixture and a tablespoonful of cod-liver oil taken with breakfast comprised his whole treatment. On Jan. 20th, 1901, he had gained four pounds in weight, his cough had almost gone, and there was very little expectoration. From this time onward improvement was very marked, the cough and sputum ceasing entirely, the physical signs of lung disease gradually removing, so that now (June, 1901) it takes very careful auscultation to detect the difference in the two bases. Apparently the boy is quite well. There is no rise of temperature or any other sign denoting latent tuberculosis at work. He has gained ten pounds weight in all.

CASE 5.—A married woman, aged 36 years, came under my care on August 20th, 1900. She had been ailing for five months; tuberculosis started from nursing her father-in-law in severe illness and loss of sleep. The disease was ushered in with hæmoptysis, of which she had several attacks during the first week. Two months later she had a return, the same as before. One month previously to being seen by me she had another attack, much the same as the first. On first examination she complained of weakness and loss of flesh; she had lost six pounds in one month; there were dyspnœa, cough, and expectoration; the sputum was teeming with bacilli. There were much crackle and symptoms of softening of the right apex in the supra-clavicular region, involving the upper third of this lung. This patient had a peculiar, shiny, scaly skin, with the hands and face cracked and tending to bleed, and slowness of speech consequent on imperfect thyroid function.

Had it not been for the tuberculosis I would have administered thyroid gland for this skin trouble as I had done with success in cases of skin disease like this. But I had always looked upon the thyroid gland as a substance with disintegrating effect on the organism when ingested. This opinion was forced on me by having seen a woman drop from 18 to 14 stones in weight within 18 months on a selected diet with alkali and thyroid gland taken internally. In my experience of tuberculosis I have never seen any good follow from using reducing agents, such as mercury, iodine, or alkalies. Here I was not called upon to treat the skin primarily, but soon after the ingestion of urea and kidney by the mouth the skin disease vanished. This patient told me repeatedly how much good she derived from these substances—that they acted like a stimulant.

The patient was put on a liberal diet, rich in animal food, and sent into the country for two months for a change of air. She took plenty of exercise out of doors and felt cheerful and hopeful of improvement. She was put on compound mixture of iron with minim doses of creasote added; bynol fitted in with her principal meals; pure urea in scruple doses three times daily was her treatment. There has not been any return of hæmorrhage. The patient improved from the first, eating more food and gaining strength and weight. She is now 10 pounds heavier than last August. This treatment has been a fairly perfect remedy for the pulmonary tuberculosis as well as curing the skin disease. She is gaining flesh and feeling well. The sputum is now free from bacilli. The woman considers herself cured.

To me this case has special interest, as I have notes of three cases of myxœdema in women where I have attended in the same family more than one child with tuberculosis. Now, if we put the threads together of a case like this and bring to bear on it the light of experimental physiology it seems to me it leads us to conclusions of great importance. Thyroidectomy performed on carnivora is followed by death usually in a few days. The same operation performed on herbivora is not followed by death. For instance, rabbits can live as well after as before the operation. We know that carnivora are more immune to tuberculosis than are rabbits. The above facts seem to point to antagonism between thyroid gland and tuberculosis. On the other hand, families with imperfect thyroid function are liable to tuberculosis. Here it is worthy of note that thyroidin increases urea.

Personally I have no fear of contagion in tuberculosis. I have formed this opinion after handling a considerable amount of the different forms of this disease during the last 17 years. I am constrained to make this statement because the terror of contagion is rife, so much so that one might think we had to deal with a disease as contagious as plague, enteric fever, or scarlet fever, whereas it is nothing of the kind. For instance, quite recently I was called in to see a patient with a mild attack of influenza. His wife had been in the habit of taking dainties to a consumptive in the very advanced stage of this disease. My patient had visited this man one week previously to my seeing him. When I first saw the patient he would insist that he had "caught" tuberculosis from the man he had visited. Further, he refused to use my clinical thermometer under the tongue, although he saw it washed in his presence. He must use his own new thermometer. This is terror of contagion with a vengeance. The proverbial red herring in the form of dread of contagion has been drawn across the track, and is diverting medical thought from the path of true progress, which will be found to lie in a more careful study of the clinical history of the disease. In my cases of apparent contagion, such as husband and wife, there seemed to be a common cause at work—unhealthy home, following unhealthy occupations, or eating unsuitable food.

Every practitioner who meets a case of tuberculosis needs to have it printed in letters of gold in his mind, that the disease is caused by a feeble microbe belonging to the vegetable kingdom, that it has taken up its position there in the human body by accident, that being a vegetable substance its natural habitat is not the animal tissues, and that his first thought should be to make things so uncomfortable for the intruder that it must cease its existence. This can be done by slightly altering the toxicity of the tissues and fluids. This epitomises my opinion of the value of urea in tuberculosis. A large number of the population possess a natural antitoxin against the bacillus; a smaller number are lacking in this. In some that possess the natural antitoxin susceptibility can be acquired by unnatural or unhealthy surroundings, such as back-to-back houses, always charged with CO_2, and badly ventilated workshops. In persons leading unnatural lives, like dressmakers and needle-women who seldom taste animal food and subsist largely on weak tea and bread, here anabolism and katabolism are

reduced to a minimum. The functions of the body are performed lazily. What I believe to be the natural antitoxins—urea, uric acid, kreatin, xanthin, sarkin, and guanin—are reduced accordingly. Deficient oxygenation within the tissues and stagnation by reason of CO_2 is the result. I believe the retention of the latter to be very conducive to the growth of the bacillus. This impression is formed from the peculiar sweetish carbonic acid odour, like that of a crowded room, I have noticed in these back-to-back houses.

Biology tells us that the bacillus is a vegetable micro-organism and if we study its cultivation bacteriologically we find it very interesting indeed. There is one cardinal principle and that is that a vegetable substance must be present in any medium selected to cultivate the microbe, the favourable being potato, agar-agar, and glycerine with meat broth. To my mind the bacteriological cultivation of the bacillus is suggestive of an explanation why a large number of herbivora are so susceptible to the tubercle bacillus. Most likely the blood and fluids within these animals contain just enough saccharine matter to provide a pabulum for the bacillus to grow in. The blood of carnivora being immune is deficient in this. Place side by side with this the acknowledged fact that excessive ingestion of starchy and saccharine food causes diabetes, and clinically that the diabetic fluids are a happy hunting ground for the bacillus, and it affords room for deep reflection in regard to both the causation and the prevention of tuberculosis. Contagion and prevention, which at present seem to monopolise public attention, are but two links out of a long chain of considerations respecting the ubiquitous tuberculosis. The problem of contagion and its corollary prevention is only partly solved by the discovery that a syringeful of dirt (bacilli are only this) injected into an animal sets up tuberculosis, and not even the support this receives from our being able to cultivate the bacilli outside the body settles this question. To-day we need to take the advice given in *Hamlet*: "By indirections find directions out."

The bacillus is no new creation. I have no doubt it was floating about in the garden with Adam. Phthisis was known to Hippocrates 460 years B.C. The prevention of tuberculosis begins, not with the bacillus, but with the crowding together of human beings in insanitary conditions lowering the vitality. Increase in the death-rate of tuberculosis goes hand-in-hand with crowding. The reason that the bacillus has assumed such importance is not from its deadly nature in itself, but that human tissue has been so transformed through civilisation and town life that the bacillus finds a suitable soil for its secret operation. This statement is borne out by the fact that in rural districts the death-rate from phthisis stands the same to-day as 50 years ago. This does not look like active contagion. It seems to me that it is time we viewed the disease in the light of modern physiology, and that now, after 19 years of fighting with the bacillus, we changed the scene of action and looked to the cell-units and the fluids which surround them—the bricks and mortar of the building—to try to discover the natural antitoxin. It is in the energies of the cell and the subtle juice that bathes it in the healthy state that the bacilli meet a foe clad in an iron armour which their missiles fail to penetrate. This explains why the healthy can live half, or even the whole, of their lives in dens of contagion and keep immune. Of course, viewed in this light, to tackle tuberculosis we must go to the fountain of mischief and acknowledge at once that it is the outcome of civilised life. The bacillus finds its favourite prey among those dwellers in cities who feel hardest the struggle for existence. We know that a man who follows a quiet, sedentary occupation consumes far less food than a man who does hard muscular work or leads an active, energetic life; we know also that the nitrogenous material excreted by the kidneys rises and falls with the amount of proteid consumed. Now if we apply this well-established truth in physiology to the patients who come before us with tuberculosis we shall see that it goes a long way to explain how those who follow sedentary lives, spending much of their time in vitiated atmosphere, fall a prey to the bacillus. I am referring now to town-dwellers. Here the intake and output are reduced to a minimum; the quantity of food consumed, meats especially, fall far below the standard needed for a physiologically healthy person; oxygenation in tissues and the elimination of CO_2 fall in the same ratio. The natural antitoxin which, I believe, belongs to the last extracts of animal food, of which extracts urea is the best-known representative in this chemical family, is too much diluted to arrest the bacillus at the moment of its entry. Once the bacillus takes up its abode in the human body we know how hard it is to dislodge. In the battle with tuberculosis the bacillus must be attacked from behind. It seems to me high time we gave up fighting the enemy by frontal attacks; and just as in the campaign now drawing to a close flanking resulted in success, so I think the principle should be applied to tuberculosis. Up to now frontal attacks have been the favourite, from burning brimstone, corrosive sublimate, carbolic acid, iodine, creasote, and, latest of all, formalin, to by-forms of these—e.g., carbonate of guaiacol, benzosol, &c. We must flank the enemy by fixing our attention on the animal fluids, the common battle-ground. We have proof that there is a natural anti-toxin for tuberculosis in both the human race and lower animals as well. Had it not been for this the human race would have been extinct ere now. Attention needs to be fixed on this; herein lies the prospect of advance. Bacteriologically the bacillus is a very feeble microbe, difficult to cultivate, a very trifling change in its environments being sufficient to arrest its growth—e.g., change of air or food or occupation, or even a medicine rubbed into the skin of the abdomen for peritoneal tuberculosis. Connected with this is the fact that unless the bacilli possess a certain degree of the toxicity of their own products they cannot survive in the tissues of an animal, but are destroyed by the anti-bacterial properties of the tissues and fluids. By nature the cat is immune, but through long generations of domesticity in some instances it has become tuberculous, probably from being fed on milk, bread, and farinacea. This is a good example of an immune animal becoming susceptible. The underlying principle here applies to a large number of human beings whose food is physiologically wrong and who lead insanitary lives. We get good examples of this in the following classes. On looking over my cases these are the occupations that head the list of tuberculosis: clerks, warehousemen, lacemakers, framework-knitters, card-punchers, bobbin and carriage makers, lace-jenniers, lace-menders, clippers, machinists, cigar-makers, dressmakers, and needlewomen. In all these individuals the living machine works at less than half-steam pressure. Human beings are converted into money-making machines from stern necessity to earn their bread. They are like the horse on the bit—they cannot help themselves. This is a social problem urgently needing the nation's attention. I refer to town-dwellers.

If there is one thing above another that calls for the exertions of the National Association for the Prevention of Consumption, it is to distribute information relative to the very early beginnings of tuberculosis; also to inaugurate a system of voluntary examination of the apparently healthy who follow such occupations as the above, in order to anticipate tuberculosis rather than to let the disease get such a hold that treatment is of no avail. More good will result from this than from notifying the disease when "the man in the street" can tell what is amiss with the patient. Every practitioner has to lament that so many cases come to him too late for cure. No wonder the bacillus finds a happy home in these people. Their natural protection, the anti-toxin, is destroyed or diluted to the vanishing point. The majority of these are cases of what I call "acquired susceptibility," and, I would add, are the most curable. In their standard of living their food is less than it should be by one-half, butcher's meat by two-thirds. The function of the cell-unit is practically in abeyance. The heart-beats and pulse are lessened from want of activity, the blood-stream that brings renewal and carries away effete matter in the healthy here doing its work lazily.

That rapid filling and emptying of the liver—the factory for turning out urea—is reduced in proportion; those rapid chemical changes associated with vital function are checked. In all these persons the fuel taken in to heat the furnace to keep the wheels of life moving is insufficient. One could write a prescription: half the number of hours of work, twice the quantity of food, animal food especially, consumed, four times as much exercise and fresh air, probably would prevent or would cure 50 per cent. of these cases. But the difficulty would be in dispensing this prescription. For years I have been struck with the low specific gravity and deficiency of solids in the urine of this class of patients; or in a few cases where the specific gravity is high this is from phosphates, which always denotes malnutrition.

In contrast with these I take the collier who I find very

rarely suffers from tuberculosis, which seems remarkable from the dusty nature of his employment. In colliers, for every single case of tuberculosis I see more than 30 with gastric disease. In this class the intake and output of the organism are increased to the maximum and every living cell within the body is urged to do duty. Anabolism and katabolism have full play, imparting to the fluids such a degree of toxicity that it arrests the bacillus at the moment of entrance. If one reviews the literature of the last 10 years on tuberculosis there is found a great effort to explain the mystery of suitable soil and unsuitable soil for the growth of the bacillus. I think that Maragliano's serum most nearly unravels the mystery, but the great barrier to success with an agent like this is the difficulty in saturating the patient and maintaining this point of saturation sufficiently long to effect cure. I have notes of 11 families who are what I call typical cases of hereditary tuberculosis. In these the lowest number of deaths per family is five; the highest is eight. I have selected these as exhibiting the most virulent form of the disease and the most incurable that the practitioner meets. In the majority of these cases I have tried all the known remedies, including mountain and country air, several patients making voyages to the Antipodes and residing there for a time. A few have improved by the change, such as one patient who gained 40 pounds in weight by a residence of six months in Egypt but died one year afterwards. Another spent two years in the hills behind Christchurch, New Zealand, but died 15 months after coming home. In nearly all these cases the treatment has been constructive, including fresh air, change of air, and abundant exercise. The disease was approached by both frontal and flanking manœuvres in the form of drugs without avail. These cases are as truly hereditary as those of diabetes, where a whole family succumbs to this disease. Still, I am sanguine enough to hope to see the time when we shall be able to apply a test to distinguish the susceptible from the immune.

We have no remedy for cases like this until we discover an antitoxin. To me the point of interest in families like these is that some members are living and have remained well in the midst of such contagion, and they are standing as living monuments to tell that a number of individuals can live one-third of a life-time in the midst of the bacilli and keep free from the disease. It is on cases like the following that I have based this opinion. 16 years ago I attended a man, aged 35 years, for destructive tuberculosis; he died within a few months. He left a wife and six little girls. At various intervals since then four of these girls have been carried away. I am now attending one of the remaining girls, ill with acute tuberculosis. The mother nursed her husband and all the children with her own hands and yet remains in the best of health. 18 months after her husband's death she married again; her husband also keeps healthy. Further, there are three children by the second husband—the eldest being 11 years old, the youngest five—all healthy and free from tubercle. In another family the mother and six children died from tuberculosis; the mother first and the children (three boys and three girls) at various intervals, their ages being between 19 and 26 years at death; one brother, aged 29 years, alone remains and his left lung is excavated by tuberculosis, with very marked deformity of the thorax. I tapped the father three years ago for acute pleurisy of the left side and now that lung is softening with tuberculosis. 12 years ago the father married again and his second wife remains well, a picture of good health, yet she has nursed four of the diseased children, whose illness extended over four years in all, and has lived in such a nest of contagion. In another family where five sons died from virulent tuberculosis the mother nursed them all during a period of 17 years, yet she remains in good health, free from tuberculosis. Surely this woman must possess a natural antitoxin to resist such inoculation.

It is surprising how people following such an unhealthy occupation as that of dustmen or tubmen, going about collecting night-soil, &c., who are inhaling bacilli probably every time the dust rises from emptying the tub, yet largely escape tuberculosis. My explanation is that they are healthy men, much out of doors in all weather and good feeders, and that the body is always well charged with the end-products of animal food, which acts as an antitoxin.

Again, one comes across cases like the following which seem a paradox. For many years I have attended a woman with typical winter-cough who is a dealer in old clothes and presumably inhales bacilli daily into her diseased bronchial tubes, where one would expect them to find a favourable soil for growth; and yet she keeps free from tuberculosis. I have examined her sputum several times with curiosity and always found it free from bacilli. The following is another case. A man, 50 years of age, a marine store-dealer, who suffers from winter cough and who is inhaling daily the vilest dust loaded with all conceivable forms of bacteria, yet keeps free from tuberculosis. Surely there must be a natural antitoxin here to arrest the bacilli at the moment of entrance.

There is proof that alcohol lessens the production of urea in the liver; and when we remember that alcohol is carried almost direct to the liver, injuring the urea factory, this may explain why so many alcoholics lapse into tuberculosis. Add to this the fact that there is such a large quantity of saccharine material circulating in the blood and diminished oxygenation in the lungs from weak heart, and in large beer-drinkers dilatation of this organ. At present I have a good example of this in a publican who suffers from tuberculosis and diabetes. Weekly I test his urine with German yeast. Before fermentation the specific gravity is 1040, afterwards it is as low as from 1005 to 1010; urea 0·09 per cent. Can we wonder that the bacilli find a home in these fluids?

Notwithstanding high authority to the contrary I believe there is antagonism between gastric ulcer and tuberculosis. I base this statement on 400 cases of bleeding gastric ulcer. I can find notes of only seven of these cases with gastric hæmorrhage and tuberculosis combined, being less than 2 per cent. Both diseases have a common cause, abounding most amongst those who follow sedentary and insanitary occupations, and both diseases are always preceded by anæmia, and dyspnœa is an early leading symptom. Take, for instance, a number of machinists all working side by side. They have not long followed the work before anæmia manifests itself. One lot slide into gastric ulcer and another into pulmonary tuberculosis. So far as the bacillus is concerned all have been exposed to a common danger—viz., this microbe floating in the air of the factory and all inhaling it alike. Why this natural selection of the bacillus by one lot and not by the other? My reply is that those prone to gastric ulcer are insusceptible to the bacillus and possess the natural antitoxin to this microbe. Clinically I am well acquainted with the many phases of gastric disease that accompany tuberculosis, but in my experience gastritis in some form has been the predominant disease.

It is a matter of every-day observation that if a tuberculous woman becomes pregnant the tuberculosis becomes quiescent during the term of pregnancy, but immediately parturition takes place the bacilli become active. I cannot remember signing a death-certificate of a tuberculous woman during pregnancy, although I have notes of 15 cases where the woman died from tuberculosis within nine months after parturition. In these cases there is evidently some antitoxin to the bacilli elaborated in the organism when in the pregnant state. If we follow up this conclusion and consider the disease of pregnancy, puerperal eclampsia, which is caused by toxic substances of excrementitious matter circulating in the blood, which matter the excretory organs, notably the kidneys, fail to eliminate, this brings us into close quarters with the antitoxins which hold the bacilli in check during pregnancy, and that is the nitrogenous waste-products that abound plentifully both in pregnancy and eclampsia. The nearest illustration that I can give of the value of urea in bad cases of tuberculosis is that it holds the disease in check—a check similar to that we see in pregnancy.

The now well-recognised fact that so long as pleurisy fluid remains in the thorax the activity of the bacilli is kept in check, but immediately the fluid is withdrawn the bacilli become active, suggests anti-bacterial properties in this fluid; and when we remember that the pleurisy fluid is rich in albumin and contains urea, uric acid, xanthin leucin, &c., probably here urea plays the most important part as a bactericidal agent.

Nottingham.

NEW HOSPITAL NEAR BRISTOL.—At the meeting of the Kingswood (Bristol) Urban Council held on June 5th the chairman stated that under the provisions of the late Mr. Handel Cossham's will a general hospital will be erected at Kingswood. The building, which is estimated to cost about £25,000, will shortly be commenced.

SULPHUR IN THE TREATMENT OF DYSENTERY.

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LATE OF THE IMPERIAL YEOMANRY HOSPITAL, DEELFONTEIN, SOUTH AFRICA.

DURING my experience of the treatment of dysentery it seemed that none of the recognised methods were infallible. In giving sulphate of magnesia or sulphate of sodium it was of the utmost importance that the case should have come under treatment early in the attack, before much ulceration had taken place, as otherwise the septic absorption continued and in some cases little or no improvement occurred and the patient died in a condition of toxæmia with rapid failing pulse, delirium, and profuse diarrhœa, with much painful tenesmus. The cases most suitable for this line of treatment seemed to be young adults of robust constitution. In giving ipecacuanha preceded by tincture of opium it was necessary to keep the patient in bed and almost to starve him whilst the administration of the drug continued to prevent the obstinate retching, which was otherwise certain to follow unless these precautions were taken, and which sometimes occurred despite all the care that was taken to prevent it. In such cases the misery of the patient racked with pain and worried with constant diarrhœa was greatly increased, and in scarcely a single case did the patient allow that his condition was ameliorated under 24 hours from the commencement of the treatment. Then in many cases, but not all, the diarrhœa became less, the tenesmus became much less painful, and the pulse, temperature, and general condition of the patient became much more satisfactory. Personally, before trying sulphur I came to the conclusion that Sir William Gull was correct when he summarised the treatment of dysentery in the three words, "rest, warmth, and ipecacuanha."

Tinc. Monsoniæ, combined with tincture of opium, was tried with pleasing results in some cases in which large quantities of blood were being passed and in some other cases where the dysentery had become more or less chronic, whilst in other cases, apparently quite similar, it was absolutely useless. Three minims of izal, combined with 20 grains of subnitrate of bismuth and from five to 10 minims of chlorodyne, was a useful prescription in many cases, and in most chronic cases bismuth and opium were prescribed for long periods with more or less success. Injections with boric acid, copper sulphate, and silver nitrate were frequently given in cases of obstinate ulceration and are undoubtedly of great service if the ulceration is situated in the rectum or the lower part of the colon, but can only be of slight service if the ulceration attacks the cæcum, ascending and transverse colon. Instead of izal I found that three minims of carbolic acid substituted in the prescription above were more reliable in action, and although many patients were taking 18 minims of carbolic acid per diem not a single case of carboluria occurred, although the urine was carefully watched in each case for this.

As none of these methods seemed perfect and as I was frequently coming across cases where it was desirable to change the treatment even more than once I thought that perhaps sulphur might be as useful in the treatment of dysentery as it had been found in the local treatment of anthrax in the place of ipecacuanha. I therefore prescribed 20 grains of sublimed sulphur combined with five grains of Dover's powder to be given four-hourly; the following are two of the cases in which this treatment was tried.

CASE 1.—Private ——, aged 34 years, was admitted into the Imperial Yeomanry Hospital, Deelfontein, on March 18th with dysentery. On admission the patient had been ill with dysentery for 11 days, having passed blood from the commencement of the attack. At first the amount of blood was slight, but latterly the motions had consisted of nothing but blood and mucus. For the last three or four days before admission he had been up all day and night with diarrhœa, passing nothing but blood and mucus. The bowels had been opened from 20 to 30 times or more in 24 hours. The pain in the abdomen was severe and straining was very distressing. The night before admission the bowels had been moved seven times; the motions contained no fæcal matter but consisted of blood and mucus and were small in amount. The temperature was 100·4° F., the pulse was 96, and the respirations were 20. The abdomen was distended and there was an area of acute pain and tenderness in the left iliac region with less severe pain over the whole of the left side. The abdomen was slightly rigid and did not move well with respiration. Palpation and even the slightest percussion caused acute pain over the iliac region. There was no vomiting but hiccoughs were present. The sulphur powders with Dover's powder were ordered on admission every four hours with belladonna fomentations to the abdomen. The next morning the temperature rose to 103·4°, the pulse was 100, and the respirations were normal, but the patient expressed himself as much more comfortable and better in every way. The abdominal condition was about the same as on admission. The bowels had been opened five times during the night and seven times during the day. Blood and mucus were still passed. The tongue was dry and covered with brown fur. On March 20th the abdomen was still very tender, but the pain was much less acute and the area of tenderness had greatly diminished, and palpation and percussion were easily borne. The straining was much less. The temperature fell to 99° at 6 P.M. The pulse was 84. The patient was still passing blood, but the motions were becoming fæcal. The bowels had been opened seven times in the 24 hours. On the 21st there was scarcely any pain in the abdomen and the tenderness had almost gone. The straining was improving. The motions were semi-solid and fæcal. No blood or mucus was noticed. The temperature was 98·2°. The tongue was clean and moist. After this the patient made an uninterrupted recovery. On the 25th the powders were given three times a day, the bowels being opened only twice in the previous 24 hours, and on the 26th one powder was ordered every night. On April 1st the patient was taking convalescent diet; he had no diarrhœa and was anxious to rejoin his regiment.

In this case severe dysentery had existed for 11 days before admission and from the abdominal condition there was evidently severe ulceration present, which no doubt gave rise to the temperature of 103·4° on March 19th, the day after admission. Plain milk was given on account of the abdominal condition, although farinaceous food as a rule seems to suit dysentery better than milk. From the very commencement of the treatment the patient became more comfortable, which is not the case with patients who are given sulphate of magnesia or ipecacuanha, who seldom own to any improvement in their general condition under 24 hours. It is also evident that the recovery was a rapid one, as in two days the motions had become fæcal and the diarrhœa was reduced to seven times in the 24 hours, and in eight days the patient had to be given an enema and was taking only one powder every night.

CASE 2.—Corporal —— was admitted to hospital on March 4th. He had been suffering from dysentery for five weeks. The bowels had been opened three times the previous night and 10 times in the hospital on the morning of admission. He had not passed any blood on the 4th, but was still passing mucus. The motions contained no fæcal matter. Tenesmus was troublesome. The abdominal pain was severe. Five grains of Dover's powder and 20 grains of sublimed sulphur every four hours were ordered about noon. On the 5th the bowels had only been opened once since the powders were given. The abdominal pain and tenesmus were much better. The patient felt much better and was much more comfortable. On the 6th the bowels had not been opened at all since the previous morning. The patient said that he felt "first-class." The powders were ordered three times a day. On the 8th the motions were fæcal and formed and rather constipated. The powders were omitted. On the 11th chicken was given and no diarrhœa occurred. On the 13th the patient requested to be sent to his regiment but was retained in hospital to recruit his strength and to see that no relapse occurred.

Here a very obstinate case of dysentery, which had lasted for five weeks, was cured immediately by the administration of sulphur and Dover's powders, and after recovery showed no sign of relapsing. In all of the cases that have been treated with sulphur the recovery has been rapid and the patient has seemed to derive relief more speedily from his pain and straining than with other methods of treatment. The cure with sulphur seems to be more certain and stable, as chronic conditions and relapses have not occurred, although with other remedies they have been prone to occur or the case has taken on a chronic condition. Blood and mucus are easily stopped and the motions quickly become

fæcal. In some cases the number of motions per diem did not at once diminish, but the pain and straining were lessened and the character of the motions became more fæcal and contained little or no blood, and I was encouraged to continue the treatment because the patient's general condition was so much better.

I do not claim that sulphur is the one and only cure for dysentery, but I think it will be found a valuable addition to our stock of remedies for this most distressing complaint. Others may find cases which may resist its curative powers. At present I have not found one, nor have I found a single case relapse or become chronic, but I was not able to test it in a sufficiently large number of cases. As soon as the diarrhœa becomes less it is advisable to give the powders less frequently, otherwise obstinate constipation is the result. In some cases I have continued the sulphur treatment by giving half a drachm of the powdered sulphur every night alone. It does not, as a rule, give rise to much trouble from flatulence and tends to diminish the unpleasant smell of the stools. The sulphur seems to act as a strong antiseptic and to bring about a speedy healing of any ulcerated surfaces in the intestine. The amœba was carefully searched for in many cases of dysentery at Deelfontein but was never once found. It was searched for in all the cases which were treated with sulphur but was never found.

THE PRACTICAL CHOICE OF CLIMATE IN PHTHISIS.[1]

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To determine the best place of residence for a patient who is suffering from phthisis is frequently a matter of some difficulty. The differences in type, stage, and complexity of the disease, the differences in individuality of those who are attacked by it, their different ages, their different circumstances, and the great number of places recommended, both at home and abroad, with their different reputations resting on different degrees of merit, have combined to make the question both difficult and obscure. The accumulation of experience and its embodiment in statistics have lately done much to lessen uncertainty. Much has been written and with admirable straightforwardness, but published statistics and precise judgments are almost confined to climates outside England. Consequently, whilst resorts of known value are available for the wealthy, we are rather at a loss in our treatment of the poor, which must be carried out at home.

On the whole, be the reason what it may, there is probably no subject in the whole range of medicine which is at once so generally important and so generally unknown as medical climatology. It may therefore seem permissible to review very briefly the present position of climatology in its relation to phthisis, in order, first, to formulate some definite suggestions for our choice of foreign resorts; and, secondly, to gather from a general consideration of the subject some practical hints to guide us in the selection of localities at home.

PRELIMINARY CONSIDERATIONS.

The first question which confronts us is the unfortunate one of sanatorium *versus* climate. There can be no doubt whatever that sanatoria such as Brehmer instituted afford the best treatment for phthisis which has hitherto been invented, and that in these institutions many patients now recover whose cases formerly would have been regarded as incurable. But to claim, as some have claimed, that it is a matter of indifference in what climate you place your sanatorium is to make an assertion which is wholly unwarrantable. The most successful sanatoria abroad, such as Görbersdorf and Nordrach, enjoy climatic advantages for which their sites were actually chosen. Moreover, there are many patients whom even sanatoria cannot cure. For the present, therefore, it would be an act of unreasonable folly to discard the assistance which a climate of proved value can afford to rational treatment.

Proceeding to the consideration of the exact amount of help which we may derive from climate there is a point, sometimes missed, which ought not to be lost sight of—viz., that our patients come to us, not to be merely "improved," but to be "cured"—cured, that is, in the sense of having their disease permanently arrested. Therefore, in judging of the merits of a climate we ought to ask ourselves, not how many cases it "improves," but how many it "arrests." We have some evidence that these two effects need not run parallel to each other. Sanatoria, according to statistics, improve more first-stage cases than high altitudes,[2] whilst high altitudes arrest more first-stage cases than sanatoria.[3] Again, sea voyages are remarkable for the great proportion of early cases which are generally improved by them—a number almost as great as at certain sanatoria and at Davos[4]; yet the percentage of arrests produced by sea voyages amongst such patients is much below the percentage at Davos or at the sanatoria.[5]

In speaking of arrest one would deprecate the distinction sometimes drawn between cases of arrest in which the relics of disease are clinically indistinguishable and cases of arrest in which disease has been more extensive and has therefore left traces which are clinically obvious. To call the former "cured" and the latter "arrested" can only create confusion. Patients in both cases are in a practical sense cured; in both they may live to the natural term of life or in both they may relapse.

To judge justly of a climate, one must, however, distinguish between its effects in early cases and its effects in cases more advanced. It may be found that conditions which produce the best results in early phthisis may not be the best for later cases. Also one must remember in treating of climates that there are cases to arrest and cases which can only be retarded and alleviated—that there are climates to get well in and climates where getting worse entails less misery than elsewhere.

Lastly, the time has come when patients must be told that treatment in a home or in a foreign climate means treatment by a medical man, and when those who will not or cannot put themselves under medical care must be made to understand that they leave home at their own risk.

CLASSIFICATION OF CASES.

For practical purposes we may divide our patients thus: patients who should be kept at home; patients who should be sent away; and patients who must decide for themselves whether they remain at home or not. And in considering the last two classes we must further divide them into two very different categories—the wealthy and the poor.

Patients who should be kept at home.—No one would be likely to send away patients suffering from acute miliary tuberculosis, acute disseminated tuberculous pneumonia, or acute pneumonic phthisis in its acute initial stage. One would not advise patients who are the subjects of advanced phthisis with albuminuria, phthisis with ulcerative diarrhœa, advanced laryngeal phthisis, diabetic phthisis, rapidly advancing phthisis, or phthisis with persistent high temperature due to tuberculisation to leave the comforts and the care which home alone can provide for them. In the cases only of the poor, where home can provide neither care nor comfort, may a move be advised and then merely to the nearest institution which can supply the requisite nursing and luxuries. Setting these cases, therefore, aside from further consideration we turn to those for whom the question of change of climate can be reasonably entertained.

Patients who should be sent away.—If a patient is already living in a suitable climate his medical adviser would hesitate before advising him to change it, but for practical purposes such cases are but few.

Let us consider first foreign climates as we can order them for the wealthy. For practical purposes we may enumerate the following varieties of cases: (1) early cases, young, vigorous, uncomplicated, with little or no fever; (2) early cases with recurrent hæmorrhages; (3) early cases which have originated in pleurisy or pneumonia; (4) early cases with little or no fever but in weakly persons; (5) early cases, "irritative, such as follow influenza";

[1] A paper read before the Devon and Exeter Medico-Chirurgical Society on May 17th, 1901.

[2] Solly: Handbook of Medical Climatology, p. 141.

[3] Compare Williams's Aerotherapeutics, p. 114, with Knopf's Prophylaxis and Treatment of Pulmonary Tuberculosis, pp. 328, 329.

[4] Compare Williams, op. cit., p. 143, and Solly, op. cit., pp. 132 and 133.

[5] Compare Williams, loc. cit., and Knopf, op. cit., p. 328.

(6) "catarrhal phthisis"—i.e., with much bronchial catarrh; (7) "scrofulous phthisis"—i.e., with other tuberculous lesions, in bones, joints, glands, &c.; (8) fibroid phthisis; (9) bronchiectatic phthisis; (10) phthisis with emphysema; (11) laryngeal phthisis; (12) elderly patients; (13) erethric patients—i.e., "nervous, irritable subjects, neuralgic, dyspeptic, bad sleepers, with habitually quick pulse and dry harsh skins"[6]; (14) anæmic patients; and (15) patients with heart disease, arterial degeneration, or feeble circulation—"chilly" people. Taking these in order we shall probably not go far wrong in dealing with them as follows.

1. Early cases—the patients being young and vigorous and the condition uncomplicated, and there being little or no fever—should be sent to the Swiss Alps in preference to any other locality, and of the Alps we may safely take Davos as a type. Their chances of recovery in the Alps are greater than at any other place, at all events in Europe. There is rail all the way to Davos, and the journey from London takes about 30 hours. It is usually unnecessary to break the ascent. The end of September is the best time to arrive there, and the patient should be prepared to remain two winters and a summer. But a patient may go to Davos later in the season, although it is better not to arrive so late as the end of January.[7] On returning the descent should probably be broken, and Ragatz or Wesen might be chosen as a halting-place. Dr. Williams's[8] statistics for patients at high altitudes give the following figures:—Of 67 cases in the first stage with one lung affected 66 per cent. were arrested; of 52 in the same stage with both lungs affected 38 per cent. were arrested; and of 86 in the second and third stages 16 per cent. were arrested. No other climate in Europe can rival these results.

2. In early cases with recurrent hæmorrhages the Alps are also indicated, provided that a few weeks have elapsed since the last attack of hæmorrhage.

3. Early cases which have originated in pleurisy or pneumonia should also be sent to the Alps.

4. Early cases, uncomplicated, with little or no fever but in weakly persons, *if they do not feel cold easily* may also do well at Davos. Usually, however, a warmer climate will have to be recommended. If sent to Davos they should break the ascent at some intermediate altitude, such as Ragatz or Wesen. If Davos is decided against they may be sent to Egypt, the Riviera, or to a sanatorium such as Nordrach. The season in Egypt is an exceptionally short one. Patients arrive in November and must generally leave in March. The journey takes about six days from London, and three of these are spent at sea. Helouan near Cairo, Luxor, or Assouan may be chosen for the season. The results seem to be excellent, but at present I cannot discover any precise statements of percentage of arrests. Patients leaving Egypt must find some other resting-place till the end of May at earliest. The Riviera is nearer home, less expensive, but apparently less certain in promoting arrest. It seems unfortunate that separate statistics are not available for the different towns along it. It is difficult to imagine that mistral-swept Hyères and mountain-sheltered Mentone produce the same improvement. Patients should arrive on the Riviera about the last week in October and should not return to England before the end of May. If the weather becomes too hot they may move inland to Grasse or travel north in May to some pleasant place like Badenweiler in the Schwartzwald. Nice is to be avoided, Cannes is uncertain, Hyères is very windy in February and March. San Remo[9] and Mentone are probably amongst the best places on the coast. It is curious that whilst patients who have wintered in Davos can return to England in May with little danger of chills patients from the Riviera are very much more vulnerable.[10] The Riviera seems in this respect to occupy a position intermediate between the high Alps and sea voyages, for the tendency to relapse on landing from a sea voyage is a well-known characteristic. It cannot, however, be imagined, after a careful perusal of the literature, but that with the constant supervision to which phthisical patients are at last submitting, with the avoidance of chills and of those social excitements which so often prove disastrous, some parts at least of the Riviera should yield in selected cases most satisfactory results.

With regard to sanatoria the most famous ones only may be considered here. The doctrine of systematic supervision of a phthisical patient's whole life in an institution for the purpose where continual open air, abundant pure food, and regulated exercise are the essence of the treatment, was first formulated by Brehmer and was put in practice at Görbersdorf in Silesia, a small village in a sheltered valley 1700 feet above sea-level. There the results attained surpassed all previous European records, and daughter sanatoria began to be erected in other parts of Germany. Of these, perhaps the most notable are Dr. Dettweiler's at Falkenstein and Dr. Walther's at Nordrach. In England the Nordrach system is generally gaining in favour and the excellent institutions now rising in various parts of these islands are more or less modelled upon it. It is difficult at present to compare the results achieved at different sanatoria, but of their general value an idea may be gathered from the statistics which Manasse published some years ago from Görbersdorf.[11] Of 1390 cases in the first stage 27·8 per cent. were arrested; of 2225 in the second stage 6·83 per cent. were arrested; and of 1417 in the third stage 0·48 per cent. were arrested. There is no special season for going to these sanatoria. The time merely depends on the occurrence of vacancies. The length of stay depends upon the case and is fixed by the medical man in charge of the institution.

5. Post-influenzal cases with considerable irritation are said to do particularly well on the Riviera.[12]

6. "Catarrhal" phthisis is the one variety of the disease which is said to do well at Madeira. The voyage to Funchal from London occupies about three and a half days in the fine Cape steamers. It is the only place within so short a distance of our shores where winter is really absent. But for the early cases which do so well at Davos a winter in Madeira may be a terrible mistake. Patients liable to diarrhœa ought not to be sent to Madeira and all patients must be instructed to boil all the water they drink. When the best has been said of Madeira there still remains in the mind the feeling that it is a risky climate and personally I should prefer to send "catarrhal" cases to a sanatorium than to run the risk of recommending it.

7. Patients who are the subjects of "scrofulous" phthisis may be sent to the Riviera.

8. Sufferers from fibroid phthisis will probably do as well on the Riviera as anywhere.

9. In cases of bronchiectatic phthisis the patients will perhaps do best in Egypt.

10. In phthisis with emphysema the patients do well in Egypt or on the Riviera.

11. Patients suffering from laryngeal phthisis may perhaps do best at San Remo or Mentone. Dr. Walther, however, tells me that such cases recover at Nordrach, and so Nordrach will naturally be thought of in sending them abroad.

12. Elderly patients will find Egypt or the Riviera their best wintering place.

13. Erethric patients will find Egypt the best place.

14 and 15. Anæmic patients, patients with heart disease, arterial degeneration, &c., should probably choose Egypt or the Riviera.

It will be observed that a very limited number of localities have been mentioned. By thus confining consideration to the few needless complexity is avoided and the remarks are limited to places which have at least well-established reputations. There are, however, other foreign health resorts which have either unquestioned merit or are so well known that patients will inquire about them. The chief of these are as follows. The Andes in the neighbourhood of the Equator possess probably the best climate in the world for phthisis. It is asserted that at Jauja in Peru 79 per cent. of all cases are arrested.[13] But although the journey to Jauja is a shorter one than that to Australia—only about four or five weeks from London—it is scarcely of such a character that one could recommend it to many patients. Much of the distance lies within the tropics with their special dangers to phthisical patients. The yellow-fever country has to be crossed at Panama, and finally the journey from Oroya, where the railway from Lima ends, is two days on mule-back over passes higher than the highest European mountain, so that mountain-sickness often overtakes both man and mule. The accommodation, too, on arrival, the food,

[6] Sir R. Douglas Powell: Diseases of the Lungs, note p. 509.
[7] Allbutt's System of Medicine, vol. i. Weber and Foster: Climate in the Treatment of Disease, p. 288.
[8] See his table, loc. cit.
[9] "San Remo has probably the best climate on the Riviera" (Lindsay: Climatic Treatment of Consumption, p. 181).
[10] Williams: Pulmonary Consumption, pp. 377 and 381.
[11] Knopf, loc. cit.
[12] Weber and Foster, op. cit., p. 290.
[13] Dr. Fuentes, quoted by Dr. A. Smith, Dublin Journal of Medical Science, vol. xii., p. 353.

language, and society, are Spanish, and the invalid should be prepared to rough it during his residence. Once established there, however, he will find the climate one of everlasting spring and may remain at Jauja until he has fully recovered. The accounts which have reached us from time to time of this valley, as well as of Quito, Santa Fé de Bogota, of La Paz in Bolivia, and other places in those regions, are certainly extraordinary, and, if readier means of access should sometime become available, the profession will no doubt endeavour to utilise them for Europeans. Colorado is probably as valuable as Davos, and has the advantage of affording the essentials for permanent residence and occupation. But the journey is a long one and the living is expensive. Southern California possesses a climate which has been greatly praised. But the distance is very great and exact statistics do not seem available. The Adirondacks sanatoria produce equally good results with the European. The high inland plains of Australia and South Africa afford for vigorous young men with early phthisis an excellent chance of recovery and a field for enterprise. The Darling Downs of Queensland and the Karroo at the Cape have yielded some of the best results which climate can afford. But the patient who goes there should remain there till he is well. He must also be prepared to rough it. The Canaries seem to have been inadequately tested. To class the whole group together is a very great mistake. A patient of mine whom I sent to Las Palmas 10 years ago is now quite well and lives all the year in England. Algiers has proved useful in a considerable number of cases. Malaga in spite of its want of sanitation seems to have been singularly successful. Of Dr. Williams's 10 patients every one did well.[14]

Lastly, it is necessary to say something of sea voyages. So much has been written about them that it is impossible to pass them over. Perhaps there is no important subject in medical climatology on which such widely differing views have been expressed, and taking all the "pros" and "cons" into account we shall probably do wisely in ceasing to recommend them. This is so strong a statement and one so much at variance with general opinion that it is necessary to explain the reasons which support it. To gauge the merits of sea voyages we must compare them with other modern means of climatic treatment. Consequently Dr. Walshe's[15] oft-quoted eulogium, which follows five pages after his reference to "the startling *quasi*-sensational novelty of treatment in the Alps," must be regarded as out-of-date. No one can read the admirable accounts of the voyage to Australia in a sailing-ship round the Cape—admittedly the best voyage—given by Lindsay[16] and by Wilson[17] without feeling the gravest misgivings about the wisdom of sending patients through the probable vicissitudes. The gales and sea-sickness of the Channel, the depressing heat or steamy vapour of the Doldrums, and the heavy seas of the Roaring Forties are a large price to pay for the intervening stretches of pleasant breezy weather. Dr. Williams's[18] statistics give 12 per cent. as the proportion of arrests in first-stage cases sent to sea. This does not compare favourably with 27·28 per cent. on dry land at Görbersdorf, or 57 per cent. at Davos. Again, while Davos arrests 16 per cent. of second- and third-stage cases, and Görbersdorf 6·83 per cent. second-stage, and 0·48 per cent. third-stage cases, not one of Dr. Williams's second- or third-stage cases was arrested. A careful perusal of works on the subject convinces me that Dr. Coupland Taylor,[19] himself a patient as well as a medical man, sums up the matter wisely. He says: "Any slight advantage there may be as to the pureness of the air of the ocean is, I maintain, far outweighed by the manifest disadvantages to an invalid at sea, such as the close ill-ventilated cabins, the draughty saloons, the weakness and straining caused by sea-sickness, the damp sea-fogs, the enforced confinement below during bad weather, and the great trial to an invalid of passing through the tropics."

It is sometimes said that "quiescent cavity cases" do very well on a voyage. They certainly do not *get* well, to judge by Dr. Williams's figures. But the opinion is so far dangerous that it is almost certain to lead to a number of advanced cases being sent away to sea. For such cases—advanced cases—Dr. Coupland Taylor[20] says, "The sea is simply a fatal remedy." Dr. Burney Yeo[21] has done good service in drawing attention to this point and it is so important that I quote at length the following: "Dr. L. E. Shaw ..... says: 'No one who has acted as surgeon to an invalid ship, who has seen patients with advanced phthisis suddenly transferred from their comfortable invalid homes on land to the small accommodation and scanty luxuries which, with the best intentions, the authorities are able to provide for them at sea; no one who has watched the fearful anxiety of these patients to get back to their homes when they find their disease progressing, and who, finally, as their best and only friend, has received their last messages for their relatives, could possibly recommend a long sea voyage as a justifiable treatment in such cases." Again Dr. Yeo[22] quotes Dr. J. de B. Griffith, physician to the Melbourne Hospital, who writes: "My personal experience of sea voyages and my position at the antipodes enable me to speak with some knowledge of the effects of a sailing-ship voyage on delicate people, and I feel quite sure that medical men do not know what they are advising when they recommend patients in advanced phthisis to come to Australia in a sailing-ship." Dr. Taylor[23] mentions one voyage in which of 10 phthisical patients six died soon after their arrival.

Of course, when a phthisical patient has made up his mind to settle in the great inland plains of America, Australia, or South Africa he must undertake a sea voyage. Even then, it seems to me, this should be regarded as a risk. Dr. B. J. Guillemard,[24] in writing of the voyage to the Cape, says: "It has been the custom to recommend a sea voyage to invalids as a universal panacea for every ill, but it must be strongly insisted upon that it has very real risks to the invalid, and for want of precautions many have arrived in Table Bay in a worse state of health than when they started."

No one of course will question the fact that phthisis in its early stage can sometimes be cured at sea, but, as sea voyages now are, early cases can be more certainly and safely cured on land. The day may come when a sort of floating Nordrach will cruise continuously in the most health-giving and least tempestuous of oceans, but that day is not yet. Meantime (unless special circumstances make a sea voyage desirable, such as an opening for employment on board ship in place of an unhealthy home), let the sea voyage be for the phthisical patient a means of transit and of transit only, and let the traveller choose as far as possible the fastest vessel and the safest route.

Foreign climates for the poor are practically non-existent.

The question of home climates for the wealthy is the same as the question of home climates for the poor, and therefore we may proceed at once to the consideration of home climates generally. Some few years ago, I think I am correct in saying, it was usual in the profession to undervalue the climates of our own country. Now there is a tendency to think that, with the addition of sanatorium treatment, they are all that can be desired. This latter view may prove to be correct, but when we come to the practical question of the best site for a sanatorium in this or that neighbourhood we soon begin to realise how much we have still to learn. We can divide English climates into sedative and stimulant, inland and marine, autumn and winter, and such divisions are useful; but when we are asked to point to a definite place on the map and to say with confidence to a phthisical patient, "That is *the* place for you to go to, and your chances of recovery there amount to so much," I fancy most of us rather feel ourselves at a loss. Yet that is what we ought to be able to do. Although a great deal of valuable work has been done, as everyone knows, on the climate of England, we still know so little that we may approach it as almost a new subject. If we want some sort of certainty in the placing of sanatoria we must investigate localities more closely than hitherto. In such an investigation three methods of inquiry will occur to us especially. 1. The collection of statistics of the results of treatment of phthisis in the area which we are studying, distinguishing between first-stage cases and cases more advanced and between cases arrested and cases only improved. We may call this the *method of comparing curative effects*. 2. The accumulation of meteorological records, temperatures, rainfall, sunshine, &c., together with comparison of soils, physical features, and so forth. This may be called the *method of comparing physical peculiarities*. 3. The observation of the death-rates

[14] Op. cit., p. 56.
[15] Diseases of the Lungs, fourth edition, 1871, p. 655.
[16] Op. cit.
[17] The Ocean as a Health Resort.
[18] Op. cit., p. 81.
[19] Wanderings in Search of Health, p. 16.
[20] Op. cit., p. 18.
[21] Climate and Health Resorts, p. 646.
[22] Op. cit., p. 642.
[23] Op. cit., p. 17.
[24] Health Abroad, p. 93.

from phthisis in the resident population with a view to finding the areas of lowest phthisis mortality. We may call this the *method of comparing phthisis immunities*.

Of these it is obvious that the first is by far the most important since it alone can give really certain information. But it is not available. Dr. Theodore Williams's[12] interesting tables deal only with "improvements," and are therefore only suggestive. The sanatoria being established in different parts of the country will in years to come afford the necessary data and will then enable us to place home climatology on the same scientific basis as that on which a part of foreign climatology already rests. But for the present we must fall back on other methods of inquiry.

The second method by itself has led us into error on more than one occasion. Pau and Madeira are, so to speak, "some of our failures." Whilst many valuable facts are at our disposal, so many facts are uncertain, that to depend for choice of climate on a comparison of the physical peculiarities of a district is, it seems to me, almost to court mistake.

The third method, though far inferior to the first, is nevertheless worthy of more consideration than it has hitherto received. It is easy enough to ascertain the phthisis death-rates in the parishes and there is every probability that these will be practically accurate. There is not a very serious danger that phthisis nowadays will be mistaken at its termination. But the Registrar-General's reports deal with too large areas for the purpose. It does not, of course, follow that because a district is very free from phthisis that this freedom may not be due to merely accidental causes—i.e., causes other than climatological influence. If, however, it can be shown that over a considerable area the variations in the death-rate from phthisis follow closely the variations of some climatic influence, the conclusion may be fair that the freedom of certain places is climatic and not accidental. We may further test the soundness of this conclusion by examining other areas to see if the same law holds, and, still further, by endeavouring to test its truth by a reference to well-known climates abroad. Finally, we may endeavour to gain some explanation of the way in which the particular climatic influence produces the variations in the phthisis death-rate. We may thus arrive at a judgment that certain low-mortality areas for phthisis owe their comparative immunity to definite climatic advantages, and it is at all events worth trying whether or not such areas will specially promote recovery from the disease. It is not logically necessary that they should do so, but it certainly seems likely. We may remember that the places abroad which have yielded the best results in the treatment of phthisis are places where phthisis was known to be uncommon. At Quito and Jauja phthisis was said to be exotic, at Davos it was scarcely known, at Görbersdorf it was rare, and at Mentone it was eight times rarer than in London. I would suggest the establishment of sanatoria for phthisis in places ascertained to be climatically immune.

To illustrate this method of ascertaining the death-rates and taking their dependence upon climate I would refer to an inquiry which I have made in our own county with reference to one climatic factor. Amidst the vicissitudes of medical fashion I believe in the value of Devonshire. The Devon cattle at all events are remarkable for their freedom from tuberculosis. We have watched even hospital out-patients recovering in reasonable proportion. There are many areas in Devon where the death-rate from phthisis is far below the average. There are parishes in Barnstaple district, in Okehampton district, and in the neighbourhood of Exeter where for 10 years there has not been a death from the disease. The whole rural district of Axminster has a death-rate from phthisis of only 0·6 per 1000, Seaton has for 10 years had this same mortality among its residents. Sidmouth has a very low mortality from phthisis. It is needless to multiply instances. For purposes of illustration we may restrict ourselves to Devon, and in the matter of sanatoria for our poorer patients we must. In the rural district of Okehampton, in the centre of the county, there is a remarkable correspondence between wind-exposure and phthisis, and shelter from wet winds seems to determine a very low death-rate from the disease. For the figures I am indebted to my friend Dr. E. H. Young, and in another paper I hope to do fuller justice to his most valuable assistance. At the south-east angle of this district there is a group of three parishes,—Gidleigh, Chagford, and Drewsteignton—where the collective mortality from phthisis in the last 10 years has been 0·7 per 1000 per annum. As the average annual mortality for England is just about twice as great one may fairly call this group of parishes a low-mortality area. Should we regard this low mortality as climatic or accidental? The parishes in question are sheltered by the heights of Dartmoor from the prevalent wet winds. The west wind and the south-west wind have practically no access to them, and if we construct a map of the exposures of the Okehampton district parishes to these two winds and compare it with a map of the phthisis death-rates of the parishes we discover a correspondence which is singularly striking. If we go further and compare it with a map of the phthisis death-rates in the parishes among the females only the correspondence becomes more striking still. If, on the other hand, we compare geology, or rainfall, or exposure to other winds with the distribution of the death-rate from phthisis we find no such correspondence except that the north-west wind seems to have a slight amount of influence. From a study of the district, therefore, one is led to the belief that the low mortality of the three parishes is due at least largely to climatic peculiarities. Can we confirm this by examining the death-rates of other districts? In the rural districts of Barnstaple, of Newton Abbot, and of St. Thomas (the only districts which I have yet examined) we find the same relationship between the wet winds and phthisis. The most sheltered rural district in Devon as regards west and south-west winds is the Axminster district and it has the lowest death-rate from phthisis. Conversely the most exposed rural district in Devon has the highest death-rate from phthisis. A medical man who practises on both sides of a ridge of hills running north and south tells me that his phthisical patients die fastest on its western slope. In our own hospital at Exeter cases of phthisis do badly when the winds are blowing from the wet quarter. The belief is thus confirmed that the low mortality in question is due to shelter from these winds. Can we get any further confirmation from our knowledge of foreign places? To form on opinion on this point we may take such health resorts as have achieved undoubted success. Confining ourselves to those on which we have clear statements, Davos in the Alps, Colorado Springs in the United States, Nordrach in the Black Forest, and Görbersdorf in Silesia may be safely called successes. Davos, according to general agreement, is almost windless in winter except when the rare Föhn is blowing. Nordrach is well sheltered, and Görbersdorf gets no strong winds. Only Colorado Springs is windy, but all winds at Colorado Springs are particularly dry. Therefore in all these places strong wet winds are absent.

Finally, can we get any rational explanation which may tend to satisfy those who doubt the possibility of such an influence of special winds? Professor Beneke's experiments on the cooling of flasks of water exposed respectively to sea-breezes and to inland breezes demonstrated a more rapid cooling of the flasks which were exposed to the sea-breezes, which are, of course, the damper. Perhaps here lies the explanation. May we not suppose that exposure to prevalent wet winds is synonymous with the well-worn expression "exposure to cold and wet"? Altogether it seems reasonably clear that shelter from west and south-west has a great deal to do with the low phthisis mortality of the three parishes alluded to. So far, then, these parishes enjoy a climatic immunity, and therefore I would suggest that their area is one which might reasonably be tried as "curative." I have only made experiment of their curative power in a single case of phthisis, but that case, an early one, did exceptionally well. After spending the coldest months of one winter in the neighbourhood of Chagford the physical signs at the affected apex had practically disappeared. I should add, however, that this patient afterwards went elsewhere and relapsed.

I do not think that many people will assert that it is a matter of indifference where one places a sanatorium, but I fancy that many people imagine that the difference is small between one part of a county and another. That is a question which experience must decide. But it surely would be wiser before spending money on a building to endeavour to determine the district which is most promising. I would suggest the selection of low-mortality areas where there is reasonable evidence that the relative immunity is due to the local climate and within those areas to choose sites which shall satisfy those conditions which experience has shown to be important for success. The conditions may, perhaps, be stated thus: a dry soil, pure air, abundant sunshine, the

[12] Influence of Climate on Pulmonary Consumption, p. 56.

absence of wind (may I say especially wet wind?), the absence of dust, the absence of fog, and the avoidance of the *immediate* sea-front. By this last I would not by any means imply an avoidance of the coast. But the *immediate* sea-front seems certainly less desirable than a short distance from the shore. A high altitude I do not mention as it is not obtainable.

Patients who must decide for themselves whether they remain at home or not.—These patients may perhaps be enumerated thus: (1) patients with early phthisis and some albuminuria; (2) patients with advanced phthisis; and (3) patients with recurrent hæmorrhage from a cavity. The practical difficulty arises in these cases chiefly with regard to foreign travel. We may therefore content ourselves with a brief allusion to places abroad.

1. Those with early phthisis and some albuminuria had better choose Egypt or the Riviera.

2. Those with advanced phthisis had better let the Riviera be their limit of distance.

3. Those with recurrent hæmorrhage will be safest in a sanatorium.

There is also a class of patients who come into this category—viz., those whose wish it is to spend their last months amidst beautiful or interesting scenery. For these, of course, there need be no hard-and-fast rules. We must only ascertain that they have made up their minds and fully understand the exact reason for their journey.

CONCLUSION.

In concluding, I would like just to retouch the main outlines of this necessarily crude sketch. In the choice of foreign climates—the climates for the few—we have now some very definite indications, indications much clearer than some people seem to think. In the choice of home climates—the climates for the many—we have no such definite indications, and, indeed, we know much less about them than some of us are willing to admit. Sanatoria, whilst of immense value, do not supersede climates, and the success of our English sanatoria will depend largely on the sites which are chosen for them. Consequently, it seems to me that a study of home climates such as should give us the same precision in their selection as we now enjoy in the case of certain foreign climates is a matter of immediate importance. If we are to reap in England the greatest benefit for the greatest number of phthisical patients for whom we are responsible we ought to combine the erection of sanatoria with the selection for them of those localities which seem most promising from a climatic point of view.

I have to express my acknowledgments to the authors of whose writings I have freely availed myself, as well as to those friends at home and abroad who have been so good as to give me much valuable information.

Exeter.

FOUR CASES OF PERFORATION (GASTRIC AND DUODENAL) SUCCESSFULLY TREATED BY OPERATION.[1]

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MANY cases of perforating ulcer have been recorded and each of the following cases presents features of interest.

CASE 1.—A man, aged 28 years, was admitted into the infirmary at 7 P.M. on May 19th, 1898, in a collapsed condition, complaining of intense pain in the epigastrium. For six years he had been treated for gastric ulcer, and hæmatemesis had occurred several times. During the day he had eaten heartily of cold fried fish, hot preserved peas, and new bread, washed down with copious draughts of beer. His abdomen was as hard as a board, without movement on respiration and with absence of liver dulness. Ether was administered four hours after perforation and a median incision was made from the ensiform cartilage to the umbilicus and a perforation was soon found on the anterior wall of the stomach half an inch from the pylorus. The perforation was surrounded by some induration and was difficult to get at owing to an overhanging enlarged liver. The ulcer was stitched up, then came a row of Lembert silk sutures, and over all I stitched a fold of omentum. In order that the pelvis should be thoroughly cleansed a second opening was made above the pubes and a quantity of foul fluid and some peas were cleared out. Several gallons of sterilised normal saline solution were used for flushing, and the wounds were closed with silkworm gut sutures which inclosed the whole thickness of the abdominal wall. He had a little bronchitis, probably from the ether, but recovered rapidly, and was discharged from the infirmary under five weeks from admission. 18 months later he came to show himself greatly delighted that his dyspepsia was cured and that he could eat all kinds of food with impunity.

CASE 2.—A man, aged 21 years, was awakened at 3 A.M. by a sharp pain in the stomach and took a teaspoonful of laudanum with such marked relief that at 6 o'clock he walked two miles to his work. He had very little pain until next day, when I was called in. I found that there was a history of dyspepsia and the presence of severe pain shooting from the edge of his left ribs to the left shoulder-blade, every breath causing a gasping moan. There was no sickness or friction and it was impossible to say whether it was gastric perforation or diaphragmatic pleurisy. I advised operation, but could not gain consent until 92 hours after the onset of the acute symptoms. A median incision was made, and as soon as the peritoneum was opened there was an escape of fœtid gas and pus from a cavity separated by dense adhesions from the general peritoneal cavity. The small oval perforation was difficult to stitch up, as it was well under the left ribs, and the stomach was so tightly bound with adhesions that it could not be pulled forward. The left lobe of the liver and the stomach were thickly covered with putrid lymph, a large quantity of which was removed. The patient was discharged cured in two months and continues to enjoy excellent health.

CASE 3.—In this case, that of a man, aged 22 years, perforation took place soon after a hearty meal of beef, potatoes, peas, bread, butter, and beer. My son, Dr. W. R. Wilson, sent him to the infirmary and five hours after perforation I found the opening in the centre of an induration two inches in diameter and half an inch thick, to the left of the middle line. A large amount of food had escaped and there were flakes of lymph in all directions. After stitching the ulcer up with two rows of sutures a second incision was made in the hypogastrium and flushing and sponging were vigorously applied. The patient was discharged in less than a month and has gained 21 pounds and is in robust health.

CASE 4.—The patient in this case, one of perforating ulcer of the duodenum, was a man, aged 48 years, who for several years had been troubled with indigestion, but whilst employed as usual at his hard work one morning was seized at 11.30, three hours after breakfast, with severe pain in his epigastrium. He presented all the symptoms of perforation, but he refused operation until 28 hours after its occurrence. Ether was administered, and as soon as the peritoneum was opened by a median incision a quantity of bile-stained mucus escaped, suggesting perforation of the gall-bladder. The perforation was found in the anterior wall of the duodenum, about an inch from the pylorus. The perforation was closed with a double row of stitches, the wound being enlarged to within four inches of the pubes. There were all the signs of advanced peritonitis, all the viscera having large patches of yellow lymph adhering to them, and the pelvis was full of septic fluid. The "toilet of the peritoneum" was performed most carefully with the aid of large pieces of lint wrung out of biniodide of mercury solution. Coil after coil of the intestine was pulled out, scrubbed, and put in again, and the liver, stomach, and pelvis were cleansed as thoroughly as possible. Normal saline solution was freely used for flushing, as in all the other cases. His recovery was slow, but he continues in his regular hard work and in excellent health.

The above are brief notes of all the cases of gastric ulcer that I have had, and not selected cases. Perforating ulcer of the duodenum is much commoner in men than in women, but that of the stomach is the reverse. My old college friend, Dr. G. H. Hume of Newcastle, has recently published all his cases of operation for perforating gastric ulcer—11 with six recoveries and every one was a woman. The percentage of recovery is usually stated to be in proportion to the length of time from perforation to the operation, but in my second case 92 hours elapsed. Perforating ulcer of the duodenum is said to be much more fatal than gastric and yet my man recovered in spite of 28 hours'

[1] A paper read before the Leeds and West Riding Medico-Chirurgical Society on May 3rd, 1901.

interval. I am of opinion that sex influences the result more than duration. Most women who have perforation are profoundly anæmic and fortunately my men were not. Thoroughness of cleaning is, I believe, of very great importance. In all four cases the pelvis contained a large amount of purulent looking fluid, large flakes of lymph, and in two cases a good deal of food. A second incision above the pubes affords better access to the pelvis and leaves a stronger abdominal wall than a long single incision.

My best thanks are due to my colleague, Dr. E. W. Selby, for his able assistance during the operations, and to Mr. W. R. Willey, house surgeon to the Doncaster Infirmary, for his unremitting care of the patients and for notes of the cases.

Doncaster.

THE TREATMENT OF PUERPERAL ECLAMPSIA BY SALINE DIURETIC INFUSIONS.

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THE subject of puerperal eclampsia is one to which a great deal of attention has been paid for a very long time, but we must admit that our knowledge, especially of the pathology of the condition, has not advanced much beyond that possessed by our predecessors. However, I think we may fairly claim to have made some improvements in the methods of treatment, but much remains to be done before we can approach these cases with confidence. It is now generally admitted that the fits are caused by the action of a toxin which has accumulated in the system of the mother. Some observers have maintained that micro-organisms are the prime factors, but of this no sufficient proof has been advanced. The toxin seems to me to be a waste product from tissue metabolism, but its exact source of origin I shall not attempt to theorise about. It has been maintained that on the death of the fœtus the albumin quickly disappears from the urine. If the toxin causes the albuminuria, as I believe it does, this would point to its origin from the tissue metabolism connected with the development of the fœtus. This statement of the disappearance of the albumin from the urine on the death of the fœtus is one which I dispute, as I have now seen three cases of eclampsia and one of severe albuminuria with macerated fœtuses and in all the albumin was abundant.

If there is a poison in the maternal blood it should affect the fœtus. That it does so has frequently been shown. The fœtus has actually been observed to be convulsed *in utero*, and I have seen several cases of convulsions during the first few days of the infant's life. I have also seen two children born in a perfectly rigid condition as if they had died in a convulsion. Sir James Simpson was the first, I believe, to point out the presence of albumin in the urine of the infant. In every case that I have examined it has been found. I have also found albumin in the urine of several children whose mothers had severe albuminuria but were rescued from eclampsia by prompt treatment. The poison seems to act on the fœtus in much the same way as it does on the mother.

The condition of pregnancy adds a new factor to a woman's economy. Her excretory organs are called upon to deal, not only with the ordinary waste products of her own system but also with those generated in the rapidly-growing uterus and its contents. The rapid development going on must of necessity give rise to a very large amount of waste products which has to be got rid of through the maternal system. A very important question arises—viz., what are the channels through which these waste products are removed?

First we may consider the alimentary channel. Constipation is the rule in pregnancy and markedly so with eclamptic patients. The importance of free purgation has always been recognised in treating the condition. I think one may fairly claim that the elimination of waste products through this channel is somewhat in abeyance. When the presence of albumin in the urine was detected attention was naturally called to the kidneys. The kidneys are undoubtedly out of order, but except in cases of pre-existing nephritis one cannot say that they are seriously diseased. They recover so quickly that one can only say that the derangement is temporary. The condition, I believe, is caused by the toxin acting very much in the same way as a poison like turpentine or cantharidine does. Albumin, and often blood, appears, excretion is lessened, and in some cases there is total suppression of urine.

Within recent years attention has been called to the condition of the liver. There is no doubt that this organ shows considerable degeneration. In many cases the condition is quite apparent to the naked eye. Hæmorrhages under the capsule or into the liver substance are sometimes seen. In a recent case there were numerous hæmorrhages all over the liver under the capsule and the liver substance looked like a compressed rotten sponge. Dr. Carstairs Douglas, the pathologist to the Glasgow Maternity Hospital has furnished me with the following report on the liver condition in four cases.

No. 1.—Liver cells dull, cloudy, and irregular. Indications of necrosis and fatty changes, the cells appearing to contain some amorphous material.

No. 2.—Cells in some parts show much disintegration and contents consist of fine molecular débris. In other parts they are large, cloudy, indistinct, and in many cases the nuclei are very large.

No. 3.—Cells are cloudy and dull; in many cases are much separated from one another and many stain badly. Some amorphous structureless material is sometimes found lying between them.

No. 4.—Cells stain badly, small hæmorrhages are found here and there; there is distinct chronic venous congestion and deposit of pigment. Macroscopic appearance of this liver was very striking.

In three out of four of these cases the liver on section presented a very peculiar brown tint, and brittle, almost honey-combed, consistency. It looked more like ginger-bread than anything else.

Last year one of my patients, after having had 28 fits, was apparently doing well. The albumin had almost entirely disappeared, the kidneys were excreting very freely, and the coma had passed off. On the fifth day the patient relapsed into deep coma and to all appearance was dying. After a third large infusion and a hot pack she began to improve and in two days she again became quite sensible and she recovered. During this second attack of coma the urine was very deeply loaded with bile pigment. If the kidneys had not been acting very freely I feel sure that she would have died. Her liver was evidently considerably deranged. I am firmly convinced that the liver plays an important part in the ridding of the system of the poison, but how it acts I do not know.

In a paper read before the Obstetrical Society of London on April 3rd Dr. Hey Groves maintained that in eclampsia there was an increased coagulability of the blood which gave rise to multiple minute thrombi and thus caused the fits. In pregnancy there is an increase in the coagulability of the blood, but I am not aware of any observations which would confirm Dr. Groves's theory. At present my friend Dr. Carstairs Douglas is carrying out experiments on this very point, but we cannot as yet make any definite statements. We have frequently found ante-mortem clots in the heart, but not specially in eclamptic cases. The minute hæmorrhages referred to by many observers I have always considered an effect and not a cause of the convulsions. During pregnancy a woman's nervous system is in a very unstable condition. It is well known that a sudden shock will often precipitate convulsions. Any prolonged mental strain will predispose to an attack. Last year we had two cases in the wives of soldiers on active service. It seems to me that the convulsions are caused by the direct action of the toxin on the nervous centres which are already in a very unstable condition.

TREATMENT.

If it is admitted that we have a toxic substance in the system the aim of our treatment should surely be either to administer an antidote or else to clear the substance from the system as quickly and as effectually as possible. As we do not know what the substance is we are unable to furnish an antidote. The method of treatment which I have adopted is one which aims at clearing the system of deleterious substances through the natural channels—i.e., through the bowels, the skin, and the kidneys. This seems to me to be more rational than giving drugs to check the fits. If we can remove the cause the fits will soon cease.

If we were able to keep all pregnant women under observation and to treat all cases of albuminuria by milk diet,

saline purges, and diuretics, eclampsia would be practically unknown. We have all seen cases rescued from convulsions by prompt treatment. At the end of last year I had two cases under treatment for a month; one in private practice and the other in hospital. In both there was marked œdema and severe headache and the urine was solid on boiling. With daily purging with salts and the administration of milk diet and diuretics both patients went to full time and were delivered of live children. In one case the child showed albumin in the urine and in the other I did not have an opportunity of examining the urine, but the child suffered from marked œdema of the arms and legs for about 10 days. In that case the salts had evidently purged the fœtus in utero as the liquor amnii was like thin tar.

When the fits have commenced we have no time to spare. Absorption through the alimentary canal is largely in abeyance. To move the bowels very large doses of medicine are necessary. A hypodermic purgative would be most useful, but unfortunately we do not possess one. Croton oil which is so useful in other cases often fails here. I have given five minims without any effect and have twice seen œdema glottidis caused by it. From one to three ounces of Epsom salts given through a stomach-tube unless the patient is quite conscious is the purgative which we now use.

To get a good action of the skin a hot pack or steam bath is most useful. Pilocarpine is too depressing and if there is œdema of the lungs, as there usually is, it may kill the patient.

To act on the kidneys diuretics by the mouth cannot be depended upon. As a rule the patient cannot swallow and her absorptive powers are very low. Dr. Groves and other writers state that there is no diuretic action after the use of normal saline solution. That may be so, but I maintain that there is a diuretic effect obtained when in addition to the normal saline solution acetate of soda or bicarbonate of potash is used. It is perfectly true that it is the second or third day before we have a very large amount of urine excreted. In most of the cases which I have dealt with there has been almost total suppression of urine. After the infusion we, as a rule, have got from two to four or more ounces of urine per hour within the first few hours. Besides flushing the system it dilutes the poison and stimulates the patient. It acts in the same beneficial way as the normal saline solution does in septic cases. I am firmly convinced that it has an effect in controlling the fits. The cases which I have treated without any drugs to control the fits have done quite as well as have those in which the drugs were given. A short time ago I reported a case in the *British Medical Journal* in which the patient had had 22 fits. They were recurring so quickly that she had three during the time the nurses were washing her. After the infusion and hot pack she never had another. As she had been delivered 12 hours it was not a case in which the emptying of the uterus had relieved her.

The infusions are given under the breast or into the abdominal wall. A medium-sized Potain's trocar and cannula with three or four feet of tubing and a funnel is the apparatus which I use. Messrs. Gardner of Edinburgh have fitted up a very convenient one for me. The apparatus should be sterilised and the skin thoroughly cleansed. From one to three pints can be run in under the breast in a few minutes. The puncture should be covered with strapping. Messrs. Burroughs, Wellcome and Co. have made up soloids of acetate and chloride of soda, one drachm in each. One of each should be added to each pint of sterilised water at a temperature of 104° F. as it cools somewhat in the tube. With ordinary precautions there is no fear of sepsis. I have given over 200 infusions and have never seen any bad effects. There is considerable tension in the part, but absorption is so quick that this is soon relieved. If necessary the infusion may be repeated several times. As soon as the patient can swallow milk should be freely administered.

As regards controlling the fits I have used all the drugs in general use, both alone and in conjunction with the infusions. Morphia, which has given such good results in the hands of some, has not given me good results. I am perfectly sure that it lessens excretion from the kidneys. My experience is leading me to give up using anti-spasmodics.

For some time I have been considering the advisability of administering oxygen[1] in bad cases and I intend giving it a trial. One would imagine that it ought to do good, and at least it can do no harm.

The obstetrical treatment has varied very much in different hands. The most difficult cases to deal with are those in which labour has not come on. The uterus should be left alone unless the fits continue in rapid succession. If the cervix is at all rigid incision is preferable to forced dilatation. Cæsarean section has been advocated for such cases but the results have been exceedingly bad. By incising the cervix one can deliver as quickly as by Cæsarean section and the shock is very much less. Any bleeding from the cervix would be beneficial to the patient and if it is excessive it can easily be controlled by stitches. If the case is well on in labour delivery should be effected at once. In all operative interference the patient should be kept deeply under chloroform to prevent shock.

Dr. Munro Kerr, who is now my colleague in the Glasgow Maternity Hospital, has collected all the cases of eclampsia treated in the hospital during the last 15 years. Under the old methods of treatment the death-rate was 47 per cent. This is very high, but it must be borne in mind that the majority of the patients are sent in after they have been having convulsions for many hours. It is rare for us to get them within 12 hours of the first fit. Since the infusions were used the death-rate has fallen to 24 per cent.

In a paper which is to appear in the *International Clinics* I have analysed the cases treated by myself up to the end of last year—21 in the hospital and one in private practice. "An analysis of these 22 cases shows that 17 were primiparous and five multiparous. One half of the labours were at full time and in only one case did the fits begin during the puerperium. Thirteen of the children were born dead and 10 alive, there being a case of twins among the latter. Of the dead children two were macerated, three were delivered by craniotomy, and three were too premature to live, so that of the 23 children only five were lost which might possibly have been saved. Of those born alive one was premature and only lived two hours. Of the 22 mothers three died, but one of the deaths was due to a perforating duodenal ulcer after recovery from the eclampsia. Even counting that as a fatal case, three deaths in 22, or 13·64 per cent., is certainly a very low death-rate." The first patient who died showed double pneumonia, multiple ulcers in the stomach, and patches of congestion throughout the intestines. She was treated with morphia and during the 44 hours that she was in the hospital we could get neither the bowels nor the kidneys to act. She only excreted 11½ ounces of urine during the whole time. The second fatal case was the one with the duodenal ulcer. The fœtus was macerated. The third patient was delivered by craniotomy. The true conjugate measured three and a half inches. As the child was dead craniotomy was done at once. The liver was markedly degenerated. The treatment has lowered the hospital death-rate from eclampsia by about 50 per cent. and we have also saved more children than by the older methods. Dr. Groves remarked in his paper that all who had tried the method were enthusiastic in its praise. I can endorse this statement as I have frequently heard from men on the subject. Most of the objections raised have been on theoretical grounds, but a little practical experience—and I have had not a little—is worth a vast amount of theory.

Glasgow.

[1] Since writing this I find that W. Stroganoff has been using oxygen for some time. He claims to have treated 58 cases without any deaths. An abstract of his paper will be found in the American Gynæcological and Obstetric Journal for April, 1901.

PRESENTATIONS TO MEDICAL PRACTITIONERS.—Mr. William Whitworth, M.R.C.S. Eng., L.S.A., was on June 6th presented by the members of the St. Agnes (Cornwall) branch of the St. John Ambulance Association with a silver inkstand suitably inscribed as a mark of appreciation for his services as honorary lecturer.—Mr. Stewart Lockie, M.D. Edin., of Carlisle, has been presented with a testimonial, consisting of a cheque for £300, a silver flower bowl, and an album register of the subscribers, who place on record their appreciation, especially of his eminent services in connexion with the medical charities of the city and district.—On May 31st, at the Town Hall, Huddersfield, Mr. E. G. Annis, medical officer of health of Huddersfield, who is leaving the town to enter on a similar appointment in the metropolitan borough of Greenwich, was presented by the Mayor with a drawing-room lamp bearing the inscription, "To Dr. Annis, from his brother officers, Huddersfield, 1901." It had been subscribed for by the principal officers of the corporation.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI, *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

ROYAL DEVON AND EXETER HOSPITAL.

A CASE OF OVARIAN TUMOUR COMPLICATED BY TUBERCULOUS PERITONITIS; OPERATION; DEATH FROM TOXÆMIA.

(Under the care of Dr. HENRY DAVY and Mr. ARTHUR C. ROPER.)

THE association of tuberculous peritonitis with an ovarian tumour is certainly rare, and the presence of the peritonitis would be likely greatly to obscure the diagnosis. The most remarkable point about the case recorded below was the sudden death which occurred only a little more than 24 hours after the operation. In the absence of a complete necropsy it is impossible to say what was the cause of death, but the explanation suggested that it was the result of a toxæmia is certainly possible. For the notes of the case we are indebted to Mr. Manning, assistant house surgeon.

A woman, aged 39 years, was admitted into the Royal Devon and Exeter Hospital on March 1st, under the care of Dr. Davy, for extreme distension of the abdomen which had gradually reached its present condition during the previous six months. The patient stated that she had suffered from vomiting and pain in the epigastrium ever since she was 15 years of age. She was fairly well up to six months before admission when she was confined of her seventh child. The confinement was normal and satisfactory and the child was well. Five or six weeks after the confinement, when she was about again, she noticed what she called "indigestion." This troubled her with vomiting about half an hour after taking food. She had gnawing pain in the epigastrium and between her shoulders which the vomiting relieved. She suckled her child for nine weeks when the milk "went away." She noticed that her abdomen was becoming larger, but beyond the gnawing pain and vomiting, which continued up to admission, she saw nothing else amiss with herself. She did not notice that she lost flesh till a month ago, since when she had wasted rapidly. She had always been thin. She had had no previous illness. Her parents were alive and in good health. Four of her sisters were living; one died a year ago from tuberculosis at the age of 42 years. Her two brothers were both alive and well.

On admission the abdomen was enormously distended and fluid thrill was readily obtained. The chest was extremely emaciated and there were signs of phthisis in both lungs. The heart was normal with the exception of an accentuated pulmonary second sound. The urine was normal. The arteries were thickened. Paracentesis was at once performed and seven pints and two ounces of blood-stained fluid were withdrawn. After the operation it was possible to feel a nodular, freely moveable mass in the abdomen, just below and to the right side of the umbilicus. This mass seemed to be of about the size of an orange and loosely connected with other smaller lumps. On March 2nd the patient had been more comfortable since the paracentesis. The pulse was regular in force and frequency and of high tension. On examination of the abdomen large veins were seen coursing over it. The direction of the stream was upwards. There was still a fluid thrill and there was dulness in the flanks. The nodule to the right of the umbilicus was very tender and was not fixed below, but seemed to have some connexion with the pelvic viscera by a slender stalk or adhesion.

Mr. Roper was asked to see the case and advised laparotomy. On March 13th the abdomen was opened by the usual incision and a quantity of blood-stained ascitic fluid escaped. A large tumour then became apparent filling the abdomen and pelvis. Some organised and vascular parietal adhesions being dealt with it was found that the tumour was chiefly attached to the omentum which seemed to be incorporated with it. The omentum was red and fleshy with no trace of fat or of its ordinary appearance. The omentum was ligatured in three or four loops and the tumour was cut away from it. The only other adhesion was to the abdominal wall on the right side just above Poupart's ligament, and this peeled off easily. The tumour, which was apparently a multilocular ovarian cyst, but with fluid too viscid to flow through any trocar, was of about the size of a Rugby football, and was delivered through an enlarged incision. The ovaries were looked for, but only the left one was found. The whole peritoneum, both visceral and parietal, was studded with miliary tubercles. The abdomen was freely flushed with boiled water, a considerable quantity of which was left in, and the wound was closed with a rubber drain at the lower end. The patient bore the operation well.

On the morning of March 14th the patient had been sick only once since the operation. Her pulse was good and her general condition was most satisfactory. Owing to the escape of a considerable quantity of the fluid left in the abdomen at the operation, the dressings had become wet and were changed. The wound was quite satisfactory. The drainage-tube was removed. At 2 P.M. the patient was suddenly taken worse after an action of the bowels; she complained of severe abdominal pain and of a feeling of faintness. The pulse was small and 160. A considerable quantity of the blood-stained fluid again escaped from the wound and saturated the bedclothes. The temperature was 100° F. She was transfused with saline solution, and strychnine and digitalin were injected hypodermically, but she rapidly sank and died at 5.30 P.M.

A post-mortem examination was not permitted but the abdomen was examined through the wound. There was a considerable amount of blood-stained fluid, much of which was doubtless water left after the operation. The ligatures were all secure though the distal portions of the ligatured omentum were covered with thin blood-clot. This was sufficiently accounted for by oozing from the fleshy substance of the omentum distal to the ligature. The universal miliary tubercles were corroborated and there were no adhesions of the intestine of importance. What was taken to be the right ovary (which it will be remembered could not be discovered at the operation) was found deeply imbedded and adherent to the bottom of the right pelvic fossa. It was so adherent that it was torn in getting it to the surface, but there was no doubt in the minds of any of the four surgeons present at the examination that it was the ovary. Unfortunately, feeling no doubt about the matter, it was not preserved. The adhesion to the abdominal wall over Poupart's ligament was readily discovered.

Remarks by Mr. ROPER.—This case presents many points of interest. In the first place, the large tumour was not suspected until after the paracentesis which was urgently needed and performed immediately after the patient's admission to the hospital. Then the diagnosis when I saw her a few days later was quite doubtful, lying between malignant disease of the omentum with ascites from irritation or obstruction and tuberculous peritonitis with an ovarian cyst. Had it not been for the signs of phthisis in the chest I should have favoured the former diagnosis inasmuch as the tumour was evidently attached above, and, with the exception of the cord-like process referred to in Mr. Manning's careful notes, was apparently (and, as subsequently appeared, really) free below. Vaginal examination yielded little information, as the fluid obscured the tumour to the touch. The nodular feel of the tumour was more suggestive of malignant disease than of ovarian. The suggestion which the notes convey of separate masses is accurate as a description of the sense conveyed by touch, but must not be read as an opinion, as a large tumour was diagnosed before operation, though the actual size was greater than we expected to find. Secondly, the association of ovarian disease and tuberculous peritonitis is, I believe, rare. Thirdly, the tumour was to all appearances ovarian, a multilocular cyst, but it had no ovarian pedicle and was incorporated with the omentum from which it was undoubtedly nourished. As we could not understand how a cystic ovary, and one of evidently recent growth, could be growing from the omentum we sent the tumour to the Clinical Research Association with a note explaining the circumstances. I regret that I cannot find the note which Mr. J. H. Targett kindly wrote to me, but it was absolutely positive as to the tumour being ovarian. Fourthly, we imagined that we discovered the missing ovary at the examination after death and if it was not an ovary I do not know what it could have been

that we found. Fifthly, the patient's death. What caused it? I have never seen anyone better than she was on the morning after the operation and she continued so until dinner-time. I was sent for at about 3 P.M. as she was thought to be dying from hæmorrhage. Dying she certainly was, but neither her pulse nor her aspect suggested hæmorrhage to my mind and moreover the temperature was rising. I can think of no other explanation than an acute toxæmia, and Mr. Targett corroborated this by saying that he knew of other cases of death from acute toxæmia after operation for tuberculous peritonitis.

I recall a case which I think resembles this one, in which I went into the country to operate for intestinal obstruction on a healthy-looking girl, who, in spite of four or five days' vomiting and obstruction, looked well and had a good pulse of not much over 70. On opening the abdomen we were surprised to find a tuberculous peritonitis with a recent adhesion obstructing the ileum close to the cæcum. The adhesion was easily dealt with and the abdomen was closed. The operation was simple and brief and I was much surprised to hear that she had suddenly collapsed and died the same night. I thought at the time that she must have died from poisoning by some fæcal toxins formed in the paralysed intestine and I regretted that I had not made a temporary artificial anus. I am now inclined to class it with the present case and to think that the toxin which killed her was formed in the tuberculous peritoneum.

GLASGOW WESTERN INFIRMARY.

A CASE OF STRANGULATED HERNIA; ENTERECTOMY.

(Under the care of Dr. DUNCAN MACARTNEY.)

THE expediency of primary enterectomy in cases of gangrene of strangulated intestine must depend chiefly on the condition of the patient. If his general state is such as to hold out any reasonable hope of his not succumbing under the increase in the length of the operation, primary resection is distinctly preferable, as the patient is spared the danger of the second operation and the duration of confinement to bed is materially shortened.

A youth, aged 19 years, was admitted into Ward 11 of the Glasgow Western Infirmary on April 21st, 1901, suffering from symptoms of strangulated hernia. He had been quite well till the night of the 17th when he felt pain in the abdomen. This pain gradually increased and became very marked, especially in the umbilical region. On the same day vomiting began and continued until the evening of the 20th. Nothing, solid or fluid, could be kept down. A medical man was at this period called in and he advised instant removal to an infirmary. This was not complied with. Early on the morning of the 21st chloroform was given and taxis was tried but without success. The patient then consented to removal and was taken to the Western Infirmary.

On admission the patient was found to be suffering very acute pain. Since the age of five years he had been the subject of an inguinal hernia on the right side. On six different occasions that he could recall he had had trouble from the swelling, the last being about a year ago. The abdomen was distended but not markedly. The upper part of the right side of the scrotum was much swollen and the scrotum on that side extended much beyond the normal. The skin was very red over the scrotum and was painful to the touch. The tumour was very tense and the percussion note was dull. There had been of late no vomiting; the pulse was good and the patient was not collapsed. The pupils were rather contracted; he had been having morphia suppositories. The heart, lungs, and urine were normal.

At 5.30 P.M. on April 21st Dr. D. Macartney, who was acting for Dr. G. T. Beatson, operated. Chloroform was given by Dr. E. Gillespie and Dr. E. Cathcart assisted at the operation. The bowel was found to be very black but still smooth and shining. A considerable quantity of blood-stained fluid escaped from the sac. The constriction was very tight. On pulling down the bowel it was found to be ruptured at the site of strangulation. The blackened portion of the bowel, about seven inches, was removed; the mesentery was left, the incision through it being along the upper margin of the bowel; the ends were sutured direct with three sets of sutures, mucous membrane to mucous membrane, muscular and serous coats to muscular and serous coats, and a Lembert's suture through the serous coat alone over both. The bowel was put back into the abdomen and the wound was closed except just above the site of the sutured bowel. This slightly open portion was stuffed lightly with iodoform gauze and the ordinary dressings were applied. The patient had some difficulty with his breathing while he was under the anæsthetic, but on the whole he took chloroform well. Recovery was uneventful except that for a few days the temperature hardly reached normal. He had enemata of soap-and-water on the third and fourth days, and about the sixth he developed a bright rash all over his body, which Dr. Macartney attributed to the enemata. His temperature rose on this occasion but never after. He steadily improved and was dismissed on May 24th well. The wound healed without pus.

Remarks by Dr. MACARTNEY.—The above report is by Dr. Gillespie. Dr. Beatson's house surgeon, to whom I am indebted for it, as also for his prompt action after receiving the case and for his careful administration of chloroform at the operation. Dr. Cathcart was my more immediate assistant in the operation and to him I feel largely indebted. Some points naturally escaped the reporter's notice and these I would supplement. It was a large hernia, and when the sac was cut through the odour was very suspicious, being slightly fæcal; the colour of the discharge, too, was almost black, which is only found in very advanced cases of strangulated hernia. In addition to bowel there was a considerable mass of omentum which was firmly attached to the bottom of the sac within the scrotum. This was ligatured in two places and incised between and the mass was left in the scrotum, where it has since shrivelled up. The stricture was very tight, more like what is found in femoral hernia by Gimbernat's ligament, and this being relieved the gangrenous portion of the bowel was found on the inner side, where this sharp edge had been in contact. In removing the bowel I used no mechanical means whatever at first. The fingers of my assistant were, however, unable to control completely the upper end of the bowel and I used Makins's clamps. The mucous membrane was united to mucous membrane with a catgut suture, continuous for four or five stitches, then tying the bight to the thread and continuing for four or five more stitches, again to interrupt, and so on. It is surprising after the mucous membranes are united how very easily the remaining two rows of sutures are inserted. The parts seem to fall in quite naturally. When dealing with the mesentery it was cut straight across and bleeding points were ligatured. No sufficient reason exists for cutting wedge-shaped segments out of the mesentery. After the bowel was united the redundant mesentery was folded on itself and fixed so by a few interrupted sutures, and continuity was established between the newly approximated portions of mesentery and the joined bowel. The bowel had given way at the point of greatest constriction; but on cutting open the removed bowel from end to end we found the mucous membrane of the most distal portion almost gangrenous. That there are two factors to take into account in the death of the bowel is evident, first, the direct pressure as caused by the strangulating agent, and secondly, the interference with the blood-supply which shows, seemingly, first in the mucous membrane at the point of greatest distension.

The operation of enterectomy of itself is by no means a very serious operation, but yet looking over the statistics the number of enterectomies that are successful is comparatively small. In strangulated hernia the number is particularly small and the reason is not far to seek. Why so many resections of bowel fail is simply that in the vast majority of cases wherein one meets with gangrenous bowel resection with or without the aid of buttons or plates is entirely a mistake. In the ordinary case, by the time that the strangulated bowel has become gangrenous, so much absorption of fœtid, feculent material has gone on that the patient is virtually dying, and to keep him on the operating table during the time which is necessary to unite the ends of the bowel either by plain suturing or by mechanical means, to shorten the process, takes from him the little chance that he has remaining. That is the common case and in such it has been my practice to open the gangrenous bowel, empty it of as much of its contents as possible, and sew the margins of the bowel to the sides of the wound. The artificial anus can be dealt with later. But the exceptional cases are such as the one reported, where

the patient still has a good pulse and where not too many days have elapsed since the strangulation, and particularly where youth is on his side. Under such conditions the surgeon may hope for a successful result.

It might be noted that in cutting away the diseased bowel the incision was made obliquely (about 20° to the axis of the tube), on the principle that, in view of after contraction effects, an ellipse the minor axis of which is that of the bowel contains more square area than a transverse section.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

The Prognosis and Treatment of Cirrhotic Ascites with Special Reference to the Treatment by Laparotomy.—Metabolism in Phthisis.

A MEETING of this society was held on June 11th, Dr. F. W. PAVY, the President, being in the chair.

A letter was read from His Majesty the King according his patronage to the Royal Medical and Chirurgical Society.

The PRESIDENT referred to the reception by the King of a deputation from the Royal Medical and Chirurgical Society for the purpose of presenting an address of condolence on the death of Her late Majesty Queen Victoria. The President also reported that the roll of the Royal Medical and Chirurgical Society had been signed by the King. It had previously been signed also by Queen Victoria and William IV.

Dr. H. CAMPBELL THOMSON made a communication on the Prognosis and Treatment of cases of Ascites occurring in the course of Alcoholic Cirrhosis of the Liver with special reference to the Treatment by Laparotomy. There was, he said, at the present time a considerable diversity of opinion regarding the prognosis of cirrhosis of the liver after the appearance of ascites. He had endeavoured to collect such information from the works of others and from his own experience, and this he believed would establish the following points—(1) That ascites arising during the course of a case of alcoholic cirrhosis of the liver might be due either (*a*) directly to the cirrhosis, or (*b*) it might depend upon some condition co-existing with the cirrhosis, such as chronic peritonitis or perihepatitis. (2) That ascites when directly dependent upon the cirrhosis was almost always a fatal condition, while, on the other hand, ascites associated with cirrhosis, but not directly dependent upon it, might often be temporarily relieved and occasionally permanently cured. (3) That, under these circumstances laparotomy performed on cases of cirrhosis of the liver with ascites was only likely to be successful in those cases in which the ascites was an associated condition of the cirrhosis and not directly dependent upon it, and that if this were so it would be misleading to look upon the operation as being one for the cure of cirrhosis of the liver. It should rather be looked upon as a means for the relief of cases of ascites, some of which, although occurring in the course of cirrhosis of the liver, were not directly dependent upon it and which were amenable to treatment. (4) That, taking a series of cases diagnosed during life as "cirrhosis of the liver with ascites," there was not sufficient evidence to show that the operation possessed any definite superiority over the more simple method of tapping. The observations of various authorities on the subject were quoted, and it was shown that whereas a patient suffering from ascites directly due to cirrhosis of the liver rarely lived long enough to survive more than one tapping (the average duration of life, according to Dr. Hale White, after the enlargement of the abdomen was first noticed being only eight weeks), patients suffering from ascites due to some associated condition might survive repeated tappings and even apparently recover. The clinical course of cirrhosis of the liver might, Dr. Thomson believed, be summed up in the following way. Cases might exist for years without any ascites, or, indeed, without any definite symptoms, but during this period ascites was liable to arise from some associated condition, the most common being chronic peritonitis and perihepatitis. Ascites arising from this cause might be frequently relieved, and occasionally it eventually entirely disappeared, and the patient then returned to his former state of latent cirrhosis without any ascites. As time went on the cirrhosis progressed until frequently the cirrhosis itself gave rise to ascites, for which tapping was of no avail, and the patient succumbed a few weeks after its onset. There need not be, and frequently was not, any long interval between the first and last tapping, as the associated ascites often merged imperceptibly into that directly dependent upon the cirrhosis. Turning to the question of treatment directed to relieve the ascites, this could in most cases, Dr. Thomson believed, only be effectually done by tapping. Formerly it was advised to put off tapping as late as possible, whereas now it was generally advised to tap early. The more radical operation recently introduced by Morison and Rutherford[1] of opening the abdomen and promoting adhesions between the peritoneum, omentum, and parietes was then considered. A table of all the recorded cases was submitted and analysed. If the operation were to survive it must be shown that it possessed some distinct superiority over tapping since, notwithstanding the slight risk of abdominal explorations, it was in every way more formidable than tapping. The cases best suited for operation were those in which the ascites was only an associated condition of the cirrhosis; the presence of cirrhosis was not necessarily a contra-indication, but the further advanced the cirrhosis the less chance must there be of the operation being successful. If there was good reason to believe that active symptoms of cirrhosis had supervened and that the ascites was directly dependent upon the cirrhosis the operation should not be undertaken. There was, of course, often great difficulty in deciding whether the cirrhosis was still latent, and to this end the most careful attention must be given to the general condition of the patient. Errors would be further eliminated by only selecting such cases for operation which had been tapped several times.—Dr. F. PARKES WEBER mentioned that the specific gravity of the fluid withdrawn by paracentesis of the abdomen was often not ascertained, but that it ought always to be, and in regard to the point now under consideration it might furnish very serviceable information. If the specific gravity were high (say, up to 1020 or nearly so) there was probably some inflammation present. In a case of cirrhosis which he (Dr. Weber) had observed the abdomen had been twice tapped and the specific gravity of the fluid withdrawn was noted as 1020. No further tapping was required. The post-mortem examination, six years later, proved that besides cirrhosis of the liver there had been perihepatitis and perisplenitis. In such cases, if a laparotomy were performed, the localised inflammation between the liver and diaphragm or about the spleen might have escaped notice and the cure of the ascites would then be set down as due to the operation. When peritoneal effusion occurred early in cases of cirrhosis the liver generally showed obvious enlargement, and the effusion was as often induced by a non-suppurative perisplenitis as by any peritonitis localised about the liver. Temporary cardiac weakness should likewise be mentioned as a possible cause of temporary ascites in cases of hepatic cirrhosis. Like Dr. Campbell Thomson and some others, Dr. Weber thought that laparotomy was not likely to give good results excepting in cases in which the liver was large, or at all events by clinical examination appeared to be large. In many of these cases an equally good result would be obtained by a few tappings, sometimes followed by the application of pressure to the abdomen, as recommended by Dr. Alexander Morison for ascites due to various causes.—Dr. HALE WHITE referred to cases of cirrhosis of the liver with ascites which he had recorded 10 years before, and he was glad to find that Dr. Campbell Thomson had arrived at the same conclusions. All the cases he (Dr. White) had since seen tended to support these conclusions. Referring to the pathology of cirrhotic ascites, a little thought showed that it was not due merely to pressure on the venous radicals of the portal vein, and ligature of that vein did not produce ascites. Cirrhosis of the liver might be compared to granular kidney. Both lesions were only part of a general change, as witnessed by the onset of swelling of the feet in some cases before the ascites, and the termination by coma in both diseases. The ascites was probably due mostly to some associated peritonitis. When investigating a number of

[1] Brit. Med. Jour., Sept. 19th, 1896.

cases which proved, post mortem, to have cirrhosis of the liver he had found that quite half of them had never had any symptoms attributable to that condition during life. It was the same in granular kidney.—Dr. CAMPBELL THOMSON, in replying, dwelt on the early occurrence of swelling of the feet before the abdominal swelling as a valuable aid to the diagnosis of cirrhosis of the liver.

Dr. FRANCIS W. GOODBODY, Dr. NOEL D. BARDSWELL, and Mr. J. E. CHAPMAN made a communication on Metabolism in Phthisis. Owing to the different opinions held by various observers as to the efficiency of treating tuberculous diseases, and more especially pulmonary tuberculosis, by over-feeding, it had occurred to them to carry out some researches as to the effect of increased feeding on the metabolism of patients suffering from this disease. For this purpose cases of the disease of varying severity were selected, and after their metabolism on the ordinary hospital diet had been determined the diet was increased in various ways in order to ascertain what was the maximum they could take without causing too great a strain on the organism. Special attention was devoted to determining what number of calories per kilogramme body weight was the most suitable, as this was the easiest way of determining a suitable diet. Having ascertained the highest-known weight of the patient a calculation was made as to what number of calories he would require in a healthy condition. From this it was comparatively easy to order a diet containing a sufficient number of calories to ensure that a system of over-feeding was carried out. It was difficult to see what benefit a patient could obtain from a system of "cramming," as the strain on the organism must be very excessive. The researches were made at the Brompton Hospital upon cases selected by Dr. Kingston Fowler. The estimations were made at the laboratory of University College. The first series of experiments were designed to ascertain the normal metabolism of certain healthy individuals who were placed on diets containing from 60 to 80 calories per kilogramme body weight. These excessive diets were taken with great difficulty, and the condition of the patients altered considerably for the worse, although an increase in weight (from two to three kilogrammes) was noticed. For some days after the termination of the experiment they suffered considerably from mucous colitis and did not regain their normal condition for from two to three weeks. In tuberculous diseases, in contra-distinction to the normal individuals, patients suffering from pulmonary tuberculosis stood a markedly increased diet very well and did not suffer nearly so much from anorexia or dyspepsia. The number of calories per kilogramme body weight which gave the best results was between 50 and 70, any increase above the latter number being quickly followed by symptoms of inability to take the diet, and in some cases vomiting occurred. When more than 70 calories per kilogramme body weight were taken there was a decided increase in weight during the period, but in no case was an adult patient so well at the termination of the period. In the cases suffering from the more advanced stages of the disease more satisfactory results were obtained on diets containing about 70 calories per kilogramme, as on these diets there was a considerable retention of nitrogen in the body together with a comparatively small tax on the digestive organs. In cases which were not so advanced a diet containing about 60 calories per kilogramme gave better results as regards the absorption and retention of nitrogen than larger ones. The average quantity of urine excreted was low in comparison with the amount of fluid taken, even when there were no noticeable night-sweats, and the quantity did not increase proportionately to the increase in the quantity of fluids. In comparison with the quantity of nitrogen given in the food the excretion of total nitrogen in the urine was very low in the worst cases and increased markedly as the condition of the lesions improved. The proportion of this substance excreted in the form of urea was much below the normal in bad cases; it also fell when very large diets were given. Notwithstanding the fact that a considerable quantity of proteid was given in the diet the excretion of uric acid did not increase markedly except in cases complicated by continuous fever. On attempting to "cram" the quantity of ammonia increased considerably, pointing to diminished alkalinity of the blood. As had already been noted by Russian observers, the authors of the paper found that the quantity of phosphoric acid excreted in this disease was very small, in some cases being less than one gramme per diem, while in cases with a considerable degree of arrest the excretion rose to 2·5 and 3 grammes. The rate of absorption of nitrogen was, on the whole, below the normal, the more so the greater the severity of the disease. On increasing the amount of proteid given there was a lessened absorption of nitrogen per cent., so that on large diets the waste of food was very considerable. The average rate of absorption of fats was extremely good in all the cases, averaging about 98 per cent., thus confirming the clinical observation that fat-containing foods were very well borne in pulmonary tuberculosis. In the most advanced cases of the disease under observation the most suitable diet was found to consist of 129·87 grammes proteids, 135·05 grammes fats, and 225·56 grammes carbohydrates. The conclusions arrived at were: 1. Both clinically and experimentally tuberculous patients showed very satisfactory results on their diet being increased slightly above the original, and it was evident that the state of the appetite gave too low an estimate of the requirements, as the original diets were of their own selection as regards quantity. 2. Comparatively large diets were well borne by those who were much below their normal weights, but not so well supported by—nor were such good results obtained in—patients up to their normal weight and with arrested disease. 3. In all cases very large diets gave unsatisfactory results, as the gain in weight was at the expense of the general health, as indicated by the failure of appetite, marked digestive disturbance, and increased intestinal putrefaction. 4. Moderately large diets gave the best results, and could probably have been continued for an indefinite period. 5. The assimilation and absorption of nitrogen was good on the whole, even in cases with high pyrexia. The absorption of fats was excellent, although very large quantities were given. 6. The patients complained least of discomfort on the diets which gave the best results experimentally, and the onset of severe dyspeptic trouble coincided with deterioration in the experimental results. 7. In cases in which the disease was becoming quiescent and the patient was approaching his normal weight it was advisable to diminish the quantity of food; but even at this period a more substantial diet was necessary than when in health.—Dr. BARDSWELL remarked that moderate quantities of food gave the best results. The diet in any given case was best fixed by considering the amount of weight the patient was below his maximum and the range of the pyrexia as representing the activity of the disease. Further, if a patient put on one pound per week the lungs did better than a more rapid increase. He was much opposed to "cramming."—Mr. CHAPMAN remarked that the diets as shown on the charts exhibited had been calculated without certain extras. The diets were worked out at 50 calories per kilogramme.—The PRESIDENT complimented the authors on their communication and remarked on the value of their researches in the sanatorium treatment of phthisis as being based upon a rational chemical foundation.—Dr. HALE WHITE had made some similar observations on a patient under the Weir Mitchell treatment and in the main had come to the same conclusions. The patient had taken very large quantities of food. The fat had all been absorbed excepting about 3 or 4 per cent. He had never succeeded in attaining a nitrogenous equilibrium and suggested, in order to account for the nitrogenous deficit, that possibly it was stored up in the tissues in some form other than proteid. He remarked on the laborious nature of such investigations.—Dr. HORTON-SMITH asked if it was possible to give some simpler rules for the construction of a dietary.—Professor VAUGHAN HARLEY remarked on the laborious nature of such inquiries. They opened a new domain in medicine. The nitrogenous deficit was partly due, perhaps, to "cheating" by the patient. A deficit of three grammes was well within experimental error. Too rapid an increase caused considerable upset and what was to be aimed at was a steady increase in weight. The number of calories per kilogramme could be based on the difference between the present and the highest weight of the individual.—Dr. GOODBODY, in reply, referring to the difficulty of obtaining nitrogenous equilibrium, said that the six patients under observation during four weeks gave 22 different periods for investigation, and of these they had succeeded in obtaining nitrogenous equilibrium in three instances. There was no easy means of obtaining accurate information, though the estimation of urea gave a certain amount of information. The best method was to estimate the total nitrogen in the urine and fæces.

OBSTETRICAL SOCIETY OF LONDON.

Fibroid Tumours complicating Pregnancy and Labour.—Exhibition of Specimens.

A MEETING of this society was held on June 5th, at 20, Hanover-square, W., Dr. PETER HORROCKS, the President, being in the chair.

Dr. ARCHIBALD DONALD read a paper on Fibroid Tumours complicating Pregnancy and Labour. He said that he had come to the conclusion that in the majority of instances neither pregnancy nor labour was seriously influenced by these tumours, but that in a small proportion of cases the danger to mother and child was greatly increased. The risks during pregnancy might be summed up as follows: (1) rapid increase in size of the tumour, causing severe pain and great distress; (2) incarceration of the tumour in the pelvis; (3) serious pressure on the bladder; (4) degeneration of the tumour through diminished nutrition; (5) excessive rotation of the pregnant uterus; and (6) abortion or premature labour as a result of pressure or of submucous development of the fibroid. Abortion or labour might be complicated (1) by obstruction of the natural passages; (2) by malpresentations; (3) by retention of the placenta or membranes; and (4) by extrusion of the tumour during labour. During the puerperium the presence of a uterine fibroid rendered septic infection more likely. The treatment of this complication of pregnancy and labour was then discussed. Two main groups of cases were recognised: (1) those in which pregnancy was allowed to take its course until full term or until the child was viable; and (2) those in which it was necessary to interfere in the earlier months. In the great majority of cases it was better to leave matters alone until term. If the tumour was located in the pelvis the treatment in each case must be settled by a careful examination—if necessary under an anæsthetic. Cæsarean section was preferable to delivery by the natural passages if the latter involved the employment of much force. He gave notes of a case in which there was rapid enlargement of the fibroid during the first three months of pregnancy but in which the condition of the patient was fairly good and in which the pregnancy was allowed to go on until nearly term. The occurrence of albuminuria and rapid deterioration in the patient's health then rendered interference necessary. It was ascertained on examination under an anæsthetic that delivery by the natural passages would be attended with great difficulty. Cæsarean section and subsequent hysterectomy were successfully performed. He then discussed the treatment in the earlier months, when interference was necessary, under the heads of (1) induction of abortion; (2) hysterectomy; and (3) myomectomy. In Dr. Donald's opinion the induction of abortion ought to be abandoned. Notes were given of a case in which the patient was admitted to hospital on account of a rapidly growing fibroid. Spontaneous abortion occurred, but the placenta was retained and had to be removed artificially. In spite of the most careful aseptic precautions septic infection occurred and a serious illness resulted. Some months later the tumour was removed by abdominal myomectomy. Dr. Donald described three cases of abdominal hysterectomy for rapidly growing fibroids in the early months of pregnancy, but he advocated a preliminary myomectomy whenever it was possible, as by this measure the life of the child might be saved. In all cases of subperitoneal pedunculated fibroids the tumour ought to be removed during pregnancy. When the tumour was more sessile and operation was required in the earlier months, it was best to enucleate the tumour and stitch up the gap in the uterine wall. If, however, the raw surface was too extensive, or if it was close to the uterine cavity, or if hæmorrhage was difficult to control, the operation ought to be terminated by hysterectomy.

Mr. ALBAN DORAN spoke of his own case of pregnant fibroid uterus successfully removed at the fifth month, reported in THE LANCET of March 2nd, p. 621, and he exhibited the specimen. There was a large fibroid outgrowth on the fundus which, as is usually the case, could in itself have hardly prejudiced either pregnancy or labour. There was a second large outgrowth springing from the posterior aspect of the lower segment and incarcerated in the pelvis which pressed the cervix against the pubes. Emptying the uterus through the vagina was impossible, and on account of the severity of the pressure symptoms it was not advisable to wait till term and then perform Cæsarean section. Myomectomy was impracticable on account of the position of the fibroid, and in this case an attempt to push the fibroid out of the pelvis would have involved great risk of rupture of the soft uterus which would have been squeezed between the two hard tumours. There was no course left but retro-peritoneal hysterectomy which proved very satisfactory.

Dr. WILLIAM DUNCAN could not agree with Dr. Donald that pregnancy and labour are only seriously influenced in a small proportion of cases by the presence of fibroids. He mentioned cases in which he had met with serious obstruction in the pelvis even after abortion had been induced, also rupture of the uterus during pregnancy with fatal result, and he had a case some years back under his care in the Middlesex Hospital where the patient was waiting until full term had arrived in order that he might perform Cæsarean section but who died from cerebral apoplexy whilst resting quietly in bed. With regard to subperitoneal fibroids he could not agree with Dr. Donald that "in all cases they should be removed during pregnancy," for unless a fibroid of this kind were impacted in the pelvis it should be left severely alone and the pregnancy and labour would proceed naturally. With regard to interstitial or submucous fibroids the nearer the cervix they were situated the greater the danger; and in these cases he thought the best interests of the mother were provided for by emptying the uterus if the pregnancy were in the early months. If, however, the tumour obstructed delivery it was better to perform Cæsarean section and then remove the uterus and the fibroid than to attempt delivery by craniotomy.

Dr. G. E. HERMAN said that many valuable papers had been written on pregnancy with fibroids. Dr. Donald's paper was the first in which pregnancy with fibroids had been adequately treated in the light of modern surgery. In all his main points he agreed with Dr. Donald. He was not convinced of the effect of fibroids in causing abortion. Dr. Donald had quoted figures which were supposed to show that abortion was frequent—those of Kelly who put the frequency at 25 per cent. and those of Lefour, which came to about 20 per cent. But 20 per cent. was about the normal frequency of abortions to labours at term. That fibroids often caused premature labour he thought was beyond doubt. The danger of pregnancy with fibroids depended more upon the situation of the growth than upon anything else. Fibroids situated above the lower segment of the uterus, unless very large, commonly caused no trouble in pregnancy or labour. He agreed with the preceding speaker that it was not necessary to remove every small subperitoneal fibroid that co-existed with pregnancy. If a fibroid or fibroids were situated in the lower segment of the uterus delivery might be obstructed by them. In such cases he (Dr. Herman) thought that the essential condition for the best treatment was to decide before labour, or quite early in labour, whether or not the tumour would obstruct delivery, and if it was judged that delivery would be obstructed to perform Cæsarean section or myomectomy, whichever seemed best, before the patient had been exhausted by prolonged labour. In deciding between myomectomy and hysterectomy he thought that in a patient so old that further pregnancy was not likely, hysterectomy was to be preferred as being safer than myomectomy.

After some remarks by Dr. HENRY BRIGGS,

Mr. J. BLAND-SUTTON observed that next to pregnancy it seemed probable that "fibroids" were one of the commonest conditions to which a woman's uterus was liable, and it was equally certain that fibroids and pregnancy often co-existed and that the two conditions had no baneful effect on each other. It was also equally certain that occasionally the co-existence of fibroids and pregnancy was fraught with great danger to the life of the mother, and the treatment of these cases had often been a matter of grave concern to those who undertook to superintend delivery. Mr. Bland-Sutton wished particularly to draw attention to the fact that in many instances in which hysterectomy had been performed in the early months of pregnancy for this complication the operation had been undertaken on the ground that the fibroids had "recently been growing quickly," but when the uterus had been removed the operator found that the presumed rapid growth was due to the associated pregnancy. He was interested in the successful enucleation of fibroids from the pregnant uterus. In one case in which he had found it necessary to perform this operation at the fourth month the uterus

was quite smooth and no other tumours were seen or felt. The pregnancy went to term and a fine boy was born without difficulty, but the uterus was tuberose with fibroids, and to add to the disappointment the child was found to have an imperforate pharynx. Although abdominal enucleation of fibroids could be performed with less risk than hysterectomy it was very rarely necessary in pregnancy and very unsatisfactory, as in a large proportion of cases other fibroids arose in the uterus. Thirty years ago Sir Spencer Wells startled the obstetrical world by urging that unilateral ovariotomy was practicable and justifiable during pregnancy. About 15 years later it was proved that double ovariotomy could be successfully performed during pregnancy and without disturbing the fœtus, and in 1901 the society received with equanimity the fact that a fibroid might be enucleated from the wall of a gravid uterus without interference with the pregnancy, the mother going safely through her confinement and gaining a vigorous child. Surely this might be regarded as a triumph of modern surgery.

Dr. A. H. N. LEWERS said that when a fibroid tumour complicated pregnancy much depended on the exact situation of the tumour. In cases like that exemplified by Mr. Doran's specimen where the tumour was situated low down it offered an insuperable obstacle to the passage of the child and necessitated Cæsarean section. In cases, also, where a patient already the subject of a large uterine fibroid became pregnant, even though the fibroid was situated in the upper part of the uterus, abdominal hysterectomy might be needed in the early months on account of the distress caused by the extra enlargement of the uterus. Such cases were, however, in his experience quite exceptional. He had seen a considerable number of cases of pregnancy complicated by fibroid tumours in which the patients passed through pregnancy, labour, and the puerperium normally. In Dr. Lewers's opinion it would be a pity if the impression were to become general that when fibroid tumours complicated pregnancy abdominal hysterectomy or myomectomy was generally required.

Dr. HERBERT SPENCER agreed with most of the recommendations in the paper. He was especially glad to hear that Dr. Donald condemned the induction of abortion. In cases where fibroids occupied the cervix or the lower segment of the uterus that operation was very dangerous owing to the rigidity of the tissues and the difficulty or impossibility of completely emptying the uterus. Though he had never performed the operation himself he had known it to terminate fatally in skilful hands when every precaution was adopted, and he thought the operation should not be performed. He agreed with Dr. Lewers in advocating a more conservative treatment of many of these cases. Fibroids implicating pregnancy were fairly common. At University College Hospital, where about 2500 cases of labour were attended annually, he had seen a considerable number of cases of pregnancy and labour complicated with fibroid tumours, but he had never met with a death from the complication and had only once had to perform Cæsarean section and to remove the uterus. He had seen cases in which it was expected that fibroids in the lower segment would interfere with the passage of the child, but when labour set in the tumours were drawn up out of the way and delivery was safely effected. Dr. Spencer was of opinion that hysterectomy in the early months of pregnancy was far too frequently performed. He would treat the severe pain which was often present by the usual medicinal remedies and would permit a living child to be born either naturally or by operation. He thought that the statement that all subperitoneal pedunculated fibroids ought to be removed during pregnancy was too absolute, and he wished (though this remark did not apply to Dr. Donald's paper) to enter an emphatic protest against the removal on account of pain of small sessile corporeal fibroids by enucleation through the abdomen during pregnancy, an operation which was by no means free from immediate and remote risks, which sometimes necessitated hysterectomy on account of hæmorrhage, and which probably left in the uterus growths which might require a subsequent radical operation.

Mr. A. C. BUTLER-SMYTHE quite agreed with the remarks made by Dr. Spencer and was glad to join in the protest against indiscriminate operating. Personally he was much obliged to Dr. Donald for teaching him that large myomata could be safely removed from the pregnant uterus, but he could state that in his experience there were instances where living children were delivered without resorting to abdominal operations. He recognised the necessity for operating in the specimens shown, but thought that there were many cases in which the fibroid might well be left alone.

The PRESIDENT quite disagreed with those who alleged that fibroid tumours of the uterus did not cause miscarriage. It was true that a woman might have fibroids and not miscarry. He had known a patient to be delivered of a full-term child whilst suffering from a sub-peritoneal fibroid as big as the pregnant uterus at full term. It was in the sub-peritoneal variety that miscarriages were not the rule. Small fibroids might exist without causing a miscarriage, but his own experience proved that when there was a fibroid tumour of the size of a cocoa-nut in the wall of the uterus it almost invariably caused miscarriage. Many such patients came with a history of repeated miscarriages, occurring generally at about the same period of gestation—namely, the third or fourth month, as if at that time the further growth of the ovum was interfered with by the tumour, and hence the expulsion of the contents of the uterus. Whilst it was true that with modern aseptic methods the mortality in hysterectomy had been greatly reduced it was equally true that the mortality in induction of miscarriage had also been greatly reduced. Nevertheless, aseptic methods had not eliminated one danger in the induction of miscarriage for fibroids, and that was hæmorrhage. This danger was considerable, because even after the escape of the liquor amnii it was often impossible, owing to the increased length and tortuosity of the canal, to reach with the finger so as to peel off the whole of the placenta. Very probably in every one of the cases described by Dr. Donald the operations were necessary, because the tumours were large and caused great obstruction. But he could not agree with the deduction that in early pregnancy with fibroids abdominal section should be performed in all cases. On the contrary, many cases, perhaps the majority, might well be left alone with a reasonable hope that all would go well. As in other diseases, each case must be judged on its own merits.

Dr. DONALD, in reply, said that many of the criticisms which had been made were due to a misunderstanding. Many of the speakers had objected to his advocacy of the removal of pedunculated sub-serous fibroids during pregnancy. The kind of tumour which he had in mind in giving this advice was a hard fibroid of fair size and with a pedicle sufficiently long and narrow to allow of considerable range of movement. The risk of removing such a tumour during pregnancy was no greater than was that of ovariotomy. On the other hand, there was great risk during pregnancy and labour and the subsequent involution of the uterus of these tumours being rotated so that their nutrition was interfered with. The only kind of case in which the induction of abortion could be entertained was one in which the delivery of a mature fœtus was manifestly impossible owing to the blocking of the pelvis by one or more fibroid tumours. In such a case the canal was generally elongated and tortuous, and there was as much risk in this method of treatment as in an abdominal operation. Morever, in any case where such conditions existed, even if the uterine cavity were safely emptied, a subsequent operation for the removal of the tumour would almost certainly be required.

The following specimens were exhibited:—

Dr. DONALD (for Dr. W. E. FOTHERGILL): A Decidual Uterine Cast of seven weeks' growth expelled with an ovum of about five days' growth, with microscopical section. This specimen was referred to a sub-committee for report.

Dr. H. R. ANDREWS: Two cases of Fœtal Ascites and Œdema.

Mr. STANLEY BOYD (introduced by Dr. AMAND ROUTH): An unusual case of Suppurating Fibro-myoma of the Uterus removed by Hysterectomy.

Mr. DORAN: A Pregnant Fibroid Uterus removed in the fifth month.

The specimens were discussed by the PRESIDENT, Dr. C. J. CULLINGWORTH, Dr. DONALD, Mr. DORAN, Dr DUNCAN, Dr. T. W. EDEN, Dr. HERMAN, Dr. LEWERS, Dr. ROUTH, Dr. SPENCER, Dr. T. G. STEVENS, and Mr. J. H. TARGETT.

BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY.—A general meeting of this society was held at 20, Hanover-square, W., on May 31st, Dr. F. Bagshawe, the President, being in the chair.—The annual dinner took place the same evening at Limmer's Hotel when Sir William

Church, Bart., proposed the toast of "The British Balneological and Climatological Society" and Dr. Fortescue Fox, chairman of the Council, responded.—The annual conversazione was then held and Dr. Burney Yeo read an address entitled "Hepatic Inadequacy."—Dr. Symes Thompson proposed, and Dr. Douglas Kerr seconded, a vote of thanks to the lecturer.—The President showed Prints of old Hastings.—Dr. C. Begg (Bath) showed a Douche-Massage Chair.—Dr. Morgan Dockrell showed Microscopic Specimens of Skin Diseases.—Dr. Glover Lyon showed a Model of an Interesting Ventilating System.—Mr. Chisholm Williams showed an apparatus for producing Electrical Currents of High Potential and High Frequency.—The Bath Corporation showed a model of the Old Roman Baths of Bath.—The Harrogate Corporation showed a mode of Combination of Douche and Needle Bath.—Dr. Cecil Musgrave (Cromer) showed views of Cromer and there were other interesting exhibits by Messrs. Negretti and Zambra (Meteorological Instruments), Messrs. Callard and Co. (Dietetic Preparations), Messrs. John Bale and Sons (Books), Messrs. Oppenheimer and Frank Rogers (Drugs), and Mr. Alfred Cox (Instruments). The society now numbers 380 Fellows.

WIGAN MEDICAL SOCIETY.—An ordinary meeting of this society was held on June 6th; there was a good attendance of members.—The President (Mr. W. Latham) read his presidential address on Minor Points in the Treatment of Surgical Diseases of Children.—The address was a practical and interesting one and lead to a hearty vote of thanks from the members, Dr. White, Dr. Benson, Dr. W. R Dix, Mr. McElligott, Mr. Greene, and the honorary secretary speaking to various points raised in the paper.

Reviews and Notices of Books.

A Text-book of Pathology. By ALFRED STENGEL, M.D., Professor of Medicine in the University of Pennsylvania; Physician to the Philadelphia Hospital, &c. Third edition, revised. London and Philadelphia: W. B. Saunders and Co. 1900. Pp. 872, 372 illustrations. Price 21*s*.

THIS being the third edition of this work but few words are needed to explain its nature and scope; suffice it to say that the author has tried to present the subject of pathology in as practical a form as possible, and always from the point of view of the clinical pathologist and an admirable text-book is the result. The present edition has been thoroughly revised with the intention of bringing the subject matter up to date and amplifying the sections on Pathologic Physiology. Controversial matter has been avoided as much as possible, excepting in certain parts of the sections on General Bacteriology and on Neuropathology in which conflicting theories are properly discussed.

We consider that this text-book will be found a convenient one for students. The descriptions of the various morbid conditions are complete and comprehensive without being too long, and a good knowledge of pathology should be acquired by a careful study of the pages of this manual.

The value of the work is augmented by the many illustrations scattered through it; the majority seem to be borrowed but are not to be despised on that account. We notice a particularly good one, which is apparently original, showing the histological changes found in acute appendicitis.

It is not easy in a volume of this kind dealing with a general subject such as pathology to select any special portions for comment. The descriptions of the various forms of tumours are especially worthy of attention and the chapter on Bacteria and Diseases due to Bacteria will be found to contain a vast amount of information. We notice that in referring to the smegma bacillus the word "acid-proof" is employed—a better term than the literal translation "acid-fast," which is generally adopted.

The hæmatozoon malariæ is also well described. The chapter on Diseases of the Blood is brought fully up-to-date; this is necessary as our knowledge in this respect has been greatly added to in quite recent years. The varieties of leucocytes and the pathological changes which the red and white blood cells undergo are duly noticed, as well as the conditions included under the title of "Primary Anæmias."

The term "peptic ulcer" is used instead of "gastric ulcer"—a change which cannot be altogether accepted, as the pathology of the condition has not been satisfactorily explained. The author says: "It is admitted that they [the ulcers] are due to the action of the gastric juice upon parts of lowered vitality." This is the probable cause of the ulcers, but the controversy on their etiology still wages, and it would have been better to retain the old term "gastric ulcer" until the pathology has been more definitely determined.

The chapter on Diseases of the Bones is well worthy of notice; an excellent coloured plate showing the epiphyseal junction in congenital syphilis also claims attention.

We congratulate Professor Stengel on having produced a capital manual on pathology.

A Clinical Treatise on Fractures. By WILLIAM BARTON HOPKINS, M.D., Surgeon to the Pennsylvania Hospital and to the Orthopædic Hospital and Infirmary for Nervous Diseases, Philadelphia. Philadelphia and London: J. B. Lippincott Company. 1900. Pp. 268. Price 18*s*.

THE basis of this volume was a series of clinical lectures delivered by the author at the Pennsylvania Hospital and they have been revised and elaborated so as to make them a complete work. The book is written in a pleasant manner and should prove interesting reading. Obsolete methods have been omitted as unnecessary for a practical treatise, and in cases where several modes of treatment are possible the author has described that method which he has personally found to be the most simple and effective.

A valuable chapter is that recording an important series of experiments which had for their object the investigation of the actual force required to fracture adult bones. By means of various testing machines the transverse, crushing, and tensile strains were estimated. The bones experimented on were taken from the body of a strong adult mulatto, 27 years of age, who had died from an acute disease. The femur was subjected to a crushing strain of 3130 pounds before it yielded, while 1155 pounds applied transversely sufficed to fracture the bone. It is, indeed, remarkable, as the author observes, that a pressure of over half a ton applied transversely was required to break the femur. When the patella was subjected to a tensile strain the bone did not break, but the ligamentum patellæ was ruptured about its middle at 1845 pounds. Dr. Hopkins appears to be surprised at this, but it has long been recognised that mere traction never breaks the patella; and if the knee is straight when the quadriceps contracts either the tendon of the quadriceps or the patellar ligament will give way. If, however, the knee is bent the patella touches the femur on only a very narrow surface so that the quadriceps and the ligament are pulling on the bone with less than a right angle between their directions. When the patella gives way under these circumstances the fracture can in no sense be ascribed to the action of tensile forces. This fact, indeed, the author recognises to some extent, but he does not attribute to the flexed position of the knee the importance it deserves.

Many useful skiagrams illustrate the positions of the fragments in fractures and must materially assist the student. The treatment advocated is sound and modern. In the description of the methods of fixation of compound fractures the author describes an ingenious "rack" which he has devised for holding the fragments of the bone while they are

being sawn and drilled for an ivory screw, and in certain cases such an apparatus would prove very useful.

The Extra Pharmacopœia. By WILLIAM MARTINDALE, F.L.S., F.C.S., late President and Examiner of the Pharmaceutical Society; and W. WYNN WESTCOTT, M.B. Lond., D.P.H., H.M.'s Coroner for North-East London. Tenth edition. London: H. K. Lewis. 1901. Price 10*s.* 6*d.* net. Pp. 688.

WHEN a book has reached its tenth edition and is so well known as the Extra Pharmacopœia anything that may be said by the reviewer is a mere work of supererogation. It presents a mine of information of its kind, so arranged as to be ready to hand and accessible to the reader and the busy practitioner, and it is not easy to realise the amount of labour and care which its compilation must have entailed. The authors in their preface to this edition call attention to the fact that since the publication of the last British Pharmacopœia there have been numerous additions of an official and non-official kind to the subject in hand, and that they have from a pharmaceutical point of view made a careful study of these publications and also of all the current literature in order to place a fair review of the present condition of pharmacy and therapeutics before their readers. We have had the curiosity to compare this tenth edition with a copy of the fourth edition published in 1885 which we happened to have in our possession and we think that the authors of the present edition may be congratulated on having successfully accomplished their task. The work throughout bears marks of having been carefully revised. In the section headed Analytical Memoranda, for example, and comprised within the pages from 525 to 544 they have managed to compress a large amount of useful information about matters which a few years ago had relatively little significance to the ordinary medical practitioner and with which he did not therefore concern himself. And the same may be said about other points scattered here and there throughout the pages of the present volume. We need scarcely add that this edition of the Extra Pharmacopœia is a most useful little *vade mecum* and deserves its popularity.

The Practice of Medicine. By JAMES TYSON, M.D., Professor of Medicine in the University of Pennsylvania and Physician to the hospital of the University, Physician to the Philadelphia Hospital, &c. Second edition. London: Rebman, Limited. 1901. Pp. 1240. 127 Illustrations. Price 24*s.*

THIS volume is intended as a text-book for practitioners and students, with special reference to diagnosis and treatment. The morbid anatomy and pathology are thus very briefly dealt with; considering the numerous excellent manuals dealing solely with these subjects this plan is a judicious one. We strongly oppose the idea that "clinical medicine" and "pathology" should be separated—a successful knowledge of the former must largely be founded on the latter; but a book such as we have now before us is most valuable, both for a student to study in conjunction with other works and also to refer to when busy with his duties in the wards and out-patient rooms. In the midst of practice also a practitioner welcomes a work on medicine in which he can readily find information which will aid him in the diagnosis of disease and treatment of his patients.

In the revision called for by a second edition of this text-book opportunity has been taken to make such additions and corrections as the progress of medicine since its publication seemed to demand, and the book has been thoroughly brought up to date.

The section on Infectious Diseases is most complete. The account given of the malarial fevers is well worthy of perusal and the description of the malarial organism is full and accurate. In accordance with modern views pneumonia (croupous, chronic interstitial, and broncho-pneumonia), and rheumatic fever are included under the heading of infectious fevers; but the author has acted wisely in retaining chronic articular rheumatism and muscular rheumatism under the "constitutional diseases." The present state of medical knowledge does not, in our opinion, justify an author in doing otherwise.

The sections on Diseases of the Blood and the Vascular System have naturally received considerable additions. A new feature in the more recent text-books on medicine is the introduction of "blood charts" showing the variation in the number of red and white corpuscles and the proportion of hæmoglobin in the course of certain diseases. In Dr. Tyson's work we find instances of such charts in the sub-sections on Typhoid Fever, on Secondary Anæmia, and on Chlorosis.

The section on Diseases of the Nervous System has also been considerably enlarged.

Throughout the book the clinical descriptions are clear and full, and the methods of treatment described are those generally recognised as being the most modern and satisfactory. We congratulate Dr. Tyson on having produced a readable and instructive manual.

Human Placentation: An Account of the Changes in the Uterine Mucosa and in the Attached Fetal Structures during Pregnancy. By J. CLARENCE WEBSTER, B.A., M.D., F.R.C.P., F.R.S. Edin. With 233 Illustrations. Chicago: W. T. Keener and Co. 1901. 8vo. Pp. 120. Price $3.75 net.

AS Professor Webster remarks in his introduction, there is no department of embryology in which greater differences of opinion exist than in that which is the subject of this work. His own observations, based as they are upon an examination of the placenta at all periods of pregnancy and upon numerous early abortions, are of great interest and value, and will do much to settle many of the disputed points in regard to the anatomy of the early placenta. The book represents the outcome of some 11 years' work, and has the advantage of placing before the English reader full details of the extremely interesting specimens of early pregnancy recently described by Leopold and Peters. In the latter specimen the pregnancy was probably not more than five or six days old, and as the appearances were very fully and completely described we are at last in possession of some trustworthy information as to the changes that occur in the decidua in the very earliest days of gestation.

In considering the decidua vera the author is of opinion that the decidual cells are undoubtedly derived from pre-existing embryonic cellular elements. He is unable to confirm Eden's view that the occurrence of hæmorrhages into the early decidua vera is an essential change, nor can he find any evidence of the development of new glands. Peters's view as to the origin of the decidua reflexa by the sinking of the ovum into the mucosa and the lateral excavation of the latter is accepted. The absence of any epithelium upon the inner surface of the reflexa and its irregular outline are in favour of this explanation. The occurrence of degenerative changes in the decidua reflexa as early as the sixth week is a matter of much interest and the fact that when a reflexal placenta is formed these degenerative processes do not occur until much later is of importance in regard to the possible causation of such degeneration.

Chapter V. upon the Early Relation between the Ovum and the Decidua is one of great interest. The work of Peters and Hubert is fully considered and a good account is given of the development of the trophoblast from the primitive epiblast.

its subsequent vacuolation, and the development of maternal blood spaces in its meshes. It must be a source of satisfaction to Professor Webster to find how fully the views expressed by him in his book on "Ectopic Pregnancy" as to the nature and formation of the trophoblast have been confirmed by subsequent observers. As to the probable functions of the early epiblastic proliferation the author suggests that it serves to fix the ovum; the trabeculæ form path-finders for the future villi, and perform the important function of absorbing nutrition for the early ovum.

There are very many points of great interest described in connexion with the development of the placenta, its shedding, and its phylogeny and the plane of separation of the ovum, for which we must refer our readers to the work itself. The book is very fully illustrated with numerous drawings and micro-photographs. The latter have all the defects that usually accompany their reproduction. It is a pity that the author has not adopted a uniform system of lettering, as in that way the labour of examining the numerous illustrations would have been materially lightened. The whole book is the outcome of some very good work and it is encouraging to find that we have at least one English worker who is able to dispute the supremacy of the Teutonic host who have so far mainly monopolised this field of research.

LIBRARY TABLE.

Atlas und Grundriss der Speciellen Pathologischen Histologie. (*Atlas and Manual of Pathological Histology.*) Von Privat-Docent Dr. HERMANN DÜRCK, Assistant in the Pathological Institute in Munich. Vol. II. Munich: J. F. Lehmann. 1901.—This forms the twenty-first volume of the excellent series of "hand atlases" published by J. F. Lehmann. It comprises descriptions of the histology of the liver, urinary organs, reproductive organs, the nervous system, skin, muscles, and bones. The work maintains the high standard of its predecessors. The plates are most beautifully reproduced and are accurate representations of the microscopic structure of the various organs concerned and the changes produced by disease. Amongst the plates devoted to affections of the liver a plate representing the pathological histology of acute yellow atrophy is noteworthy, as are also plates showing recent and old gummata in the liver. Amongst the many other excellent plates we find illustrations of the following conditions: the kidney in acute leukæmia, embolic tuberculosis of the kidney, "diphtheritic cystitis," tuberculosis of the prostate, testicle showing gummata, tuberculous salpingitis, syphilitic spinal pachymeningitis, tuberculous and syphilitic lepto-meningitis, multiple sclerosis, pigmentation of the skin in Addison's disease, and osteomalacia. We can only once more express our unbounded admiration as to the manner in which these volumes are published and the plates reproduced.

The Church of Humanity. By DAVID CHRISTIE MURRAY. London: Chatto and Windus. 1901. Pp. 313. Price 6*s.*—This is the history of one John Manger who from being a clown in a travelling canvas theatre and more or less of a dipsomanic became immersed, converted, and carried away in a religious movement. Inspired by a passion to be of service to mankind he became the founder of a Church. John Manger was a man of strong emotional nature without any education or pretence, but endowed with oratorical powers and a melodramatical style of preaching of no mean kind, and if he was a religious fanatic he is nevertheless represented as thoroughly sincere and dominated by such a passionate belief in the truth of what he was advocating as to make him for the time being inspired. There is no lack of sensational and exciting incident introduced into his history and career from its beginning to its close, what with hypnotism, the tragic history of his marriage, and all that it led to. It is powerfully written and the characters are strongly drawn, and the description of the people among whom John Manger lived, moved, and had his being is, we doubt not, true to life and well done, but we find ourselves asking whether the impressions created by reading literature of this sort be of a wholesome nature. The parts descriptive of Mrs. Toombey, the widowed occupant of a travelling van, and of her wedding with Mr. Grimes, and of Mrs. Manger's interview with her husband's business brother in the church transactions when calling upon him to produce his accounts are excellent as well as amusing.

BOLINGBROKE HOSPITAL, WANDSWORTH COMMON.

THE Lord Mayor, accompanied by the Lady Mayoress, the Sheriffs, and other city officials, visited Wandsworth on June 8th to lay the memorial-stone of the new Victoria wing of the Bolingbroke Hospital, Wandsworth Common. The civic party was met some distance from the hospital by a procession of trade and friendly societies, which accompanied it to the site prepared for the laying of the stone. The Mayor was received at the hospital by Canon Erskine Clarke and other governors.

Canon ERSKINE CLARKE, addressing the Lord Mayor, said that in the name of the governors of the hospital he had the honour to ask his lordship to lay the corner-stone of this new wing which had been given the name of their late good queen. It was called a wing and it would be a wing of the old house, but it really was much more. It was the first part of a great hospital with 150 beds. The new wing would be used as an out-patient department. The difficulty of dealing with out-patients who were able to pay for medical treatment had been overcome, thanks to the suggestion of Mr. Lyster, the medical superintendent, and no out-patient was received except with a certificate from a duly qualified medical man. He pointed out that the population of Battersea had grown considerably during the last 25 years and he dwelt upon the necessity for the hospital which was four miles distant from the nearest general hospital. The governors had been greatly encouraged in their efforts to carry on the hospital by the loyal support of the industrial classes who had contributed £900 towards the hospital.

Prayer was then offered by the Bishop of Southwark and the Lord Mayor performed the ceremony of laying the memorial stone. The Lady Mayoress received a number of purses, the first donor being a baby, a patient from the hospital carried by one of the nurses. A vote of thanks to the Lady Mayoress and the Purse-holders, moved by Mr. Percy Thornton, M.P., and seconded by Mr. H. Kimber, M.P., and also to the Lord Mayor, moved by Mr. William Davies, J.P., L.C.C. (Mayor of Battersea), and seconded by Mr. J. Lidiard, J.P. (Mayor of Wandsworth), concluded the proceedings.

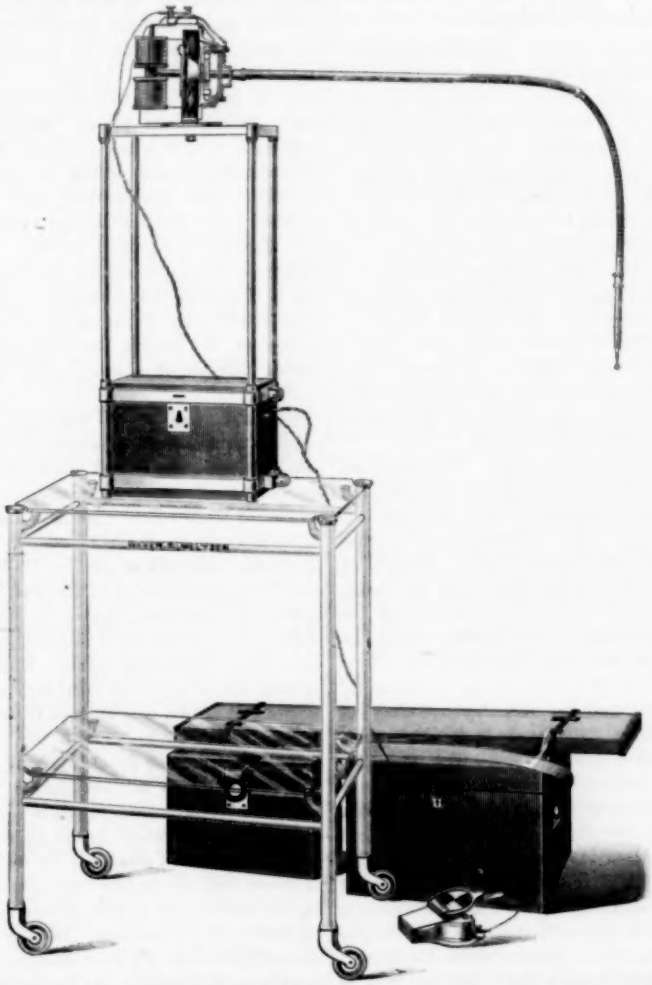
DOWNDERRY, a seaside resort on the Cornish coast, was *en fête* on June 5th, when the new water-supply was formally opened. The supply is derived from Deviock by means of springs and reservoirs, the cost being estimated at about £1400. Downderry has also an efficient system of drainage which was completed in October, 1900.

THE LIVINGSTONE EXHIBITION.—The second Livingstone Exhibition, under the patronage of Princess Christian, which is practically a Travellers' Health Exhibition, will be held in the Westminster Town Hall from June 18th to 21st. A representative display will be made of travellers' requisites by leading firms engaged in the sale or manufacture of such goods, and lectures will be delivered on a variety of subjects relating to health and travel. There will also be a valuable loan collection, including a number of Livingstone relics, one of which is the section of the tree containing the inscription which originally marked the place where Livingstone's heart lies buried and which is lent by the Royal Geographical Society.

New Inventions.

PORTABLE SURGICAL MOTOR.

KNOWING the want felt by surgeons for a good form of motor which can be carried about to private operations we send a description of one used by us. It has been constructed by Messrs. Mayer and Meltzer of Great Portland-street who have spent much time in perfecting the various details. The 16-volt accumulator is of a sealed type, having a capacity of 18 ampère hours and it weighs about 34 pounds. The motor is of the type known as the "D" pattern, so called on account of the shape of the field magnet. The armature is a gramme ring and is attached directly to the shaft which carries the cable, thus acting the part of a fly-wheel. It weighs about 15 pounds and is mounted on a gun-metal turn-table which enables it to rotate and to follow the movements of the operator. The turn-table is mounted on a platform at each corner of which are sockets, and similar sockets are attached to the steel frame which surrounds the accumulator. Into these sockets steel tubes are fitted which form a rigid stand at a convenient height. The accumulator acts as a secure base for the motor when in action. The metal cable is directly attached to the central shaft of the motor and is covered with a flexible metal tube which can be boiled. The hand-piece is attached to the cable by means of a left-handed screw. It is perfectly plain in design and has no corners for the accumulation of septic matter. The drills, saws, and other tools are held in position by a spring clutch acting in a groove in their shanks, and are easily fixed or removed. The hand-piece is in two parts *only*. The cable and hand-piece are supported by a rigid steel tube terminating in a spring which relieves the operator almost entirely of their weight and allows of much greater delicacy of touch than would otherwise be possible. The motor is started and its speed regulated by means of a foot-switch. The apparatus ready for use is shown in the figure, and when dismounted it fits into three packages shown at the foot of the figure. The case on the left is the accumulator; that on the right contains the motor, stand, turn-table, switch, and other fittings; the package on the top carries the legs of the stand and flexible arm. The entire apparatus with cases included weighs about 70 pounds. For hospital work the motor is wound to suit the voltage of the main current. It is mounted on an enamelled steel pedestal fitted with ball-bearing castors. Burrs, drills, a small trephine, and Cryer's drill can be used with the motor.



C. A. BALLANCE, M.S. Lond.
W. MILLIGAN, M.D.

THE LANCET.

LONDON: SATURDAY, JUNE 15, 1901.

Medical Union.

FROM its foundation THE LANCET has always attempted to impress upon medical men the importance of united action in professional matters. Medical men are all inspired with the same hopes; we all have the same objects in view; and inasmuch as true medical science is the same wherever taught, we all approach our duties equipped in the same broad way to assist in the prevention of disease and the alleviation of misery. Details of treatment may differ in certain schools—a point in etiology that in one place is regarded as theoretical is accepted in another as proven, but these minor differences of opinion, by leading to comparisons of view, only serve to bring out more clearly the important fact that true medicine has no geographical limits. Therefore it is that medical union ought to be so possible and so useful, and we are certain that it could play a much more important part in our professional life if we realised with clearness what is meant by the words.

A professional union is not a trade union. Two prominent persons have recently accused the medical profession of employing trade union methods towards the public—Mr. CHAMBERLAIN and Lord GRIMTHORPE. Let us deal first with Lord GRIMTHORPE who, although he describes himself in a letter to the *Times* as having once been "a sort of Archbishop," must not be taken seriously. Lord GRIMTHORPE, besides being an ex-quasi-archbishop (he has been Chancellor and Vicar-General of the province of York) is an ecclesiastical lawyer of some note and an amateur architect of more daring than science. His letters to the *Times* have been during his long life frequent and free; they have often been ridiculous, but his recent effusion is silly without containing the saving graces of humour and caustic phrase which we are wont to expect from his pen. Lord GRIMTHORPE considers that the General Medical Council—"a parcel of doctors" as he politely terms it—is guilty of unionist tyranny when it strikes off the roll of the medical profession the name of an unworthy member. He evidently has not the faintest idea of the position which the General Medical Council occupies towards the public and fails to see that its actions in purging the Register are undertaken to protect the public. His attempt to disparage the medical profession in the eyes of the world through the medium of the *Times* offers a sad proof of his advancing years—and no more need be said about it. Mr. CHAMBERLAIN is in a different position. He is one of the most prominent statesmen in the world, his general repute as an able and clear-headed man is universal, while he is a specially experienced judge of trade methods. He also has alluded to the General Medical Council as employing the methods of trade unionism. He is not suffering from senility, and his unfortunate words in the House of Commons in detailed defence of the conduct of Dr. IRVINE were spoken no doubt with conviction. He described the General Medical Council as having placed a stigma upon Dr. IRVINE for the trade union offence of underselling his fellow tradesmen by assisting in certain charitable work. Dr. IRVINE himself, before the General Medical Council on June 8th last, admitted that he quite understood that the question of the scale of fees which was laid down by the Birmingham Consultative Institute had nothing whatever to do with the decision of the Council in finding his professional conduct "as being of a serious character," while he recognised that the only offence alleged against him was that he had been considered to be privy to certain advertisements issued by the Institute. The essential claim of the Birmingham Consultative Institute is that it is not a charity but an institution for self-respecting persons willing to pay proper fees. Mr. CHAMBERLAIN'S misstatement—that Dr. IRVINE was punished by the General Medical Council for taking lower fees than his professional brethren with intent to help a charity—remains uncorrected and doubtless will so remain; and it is possible that this fact has impelled Lord GRIMTHORPE, and other people too old or too stupid to think for themselves, to imagine that the medical profession is banded together in a strict trade union to despoil the public.

Our readers may find this impression among their patients and they would do well to be prepared to explain the difference between a professional union and a trade union. We are not here decrying trade unions. We are not denying that many trade unions have been animated by far nobler sentiments than the desire to extract from the employer of labour the maximum of pay for the minimum of work. If sometimes the tyranny of capital has been replaced by the tyranny of labour the situation is one that usually adjusts itself. But what we desire to point out is that professional union means something more. Medical men are bound together by the nature of their high calling. Professing a science that is one, they attempt to regulate their dealings both with each other and with the public according to a code that is accepted by all, and that has gradually grown up as the intimate and confidential nature of the trust reposed in them became patent to civilised nations. The code has been recognised by the legislature of this country when discretion was granted to the General Medical Council to remove from the Register the names of persons transgressing its laws which, if more or less unwritten, are still so familiar to all medical men. In these well-known circumstances to describe the bond existing between medical men as a simple trade union is to show complete ignorance. For the services which the medical profession renders to the public the medical profession must be paid, and the question has always presented itself to thinking people how far the profession can use the power of union, given by a common basis of knowledge and a common code of ethics, to maintain a proper standard of remuneration. In certain positions it is being gradually recognised that to accept contract work is to come dangerously near infringement of the code. The point of inadequate fees is one thing and one thing only in the question of contract work. Where the

employers are laymen the medical man loses his professional independence, and may be placed in a position, as Dr. IRVINE was, where to agree with his lay employers is to transgress the accepted code.

Sanitation and Yellow Fever in Havana.

A DISTINGUISHED American writer has truly said: "By the death-rate all sanitary reforms must be tested. They will stand the test. Lower the ground water, replace sewage-soaked wells with an arterial supply from pure sources, let sewers relieve the overburdened ground of the products of waste, empty and disinfect the reeking vaults, cleanse the garbage-strewn alleys, and the death-rate will respond as promptly as the mercury in the barometer tube to the changing weight of the atmosphere." Judged by this test Havana under the American *régime* has been found to be no exception to the rule. The death-rate has been largely decreased, and it is confidently anticipated that when other contemplated sanitary reforms have been introduced the mortality of the Cuban capital will compare favourably with that of cities which enjoy a well-established reputation for healthfulness. Major VALERY HAVARD, chief surgeon of the Department of Cuba, in a report recently published, comments at length upon the effects of the sanitary reforms already carried out in Havana, but by far the chief interest of his remarks centres in his description of yellow fever in Havana from the point of view of the sanitarian.

The investigations of Major WALTER REED and his colleagues with respect to the etiology of yellow fever, resulting in the theory that it is caused by the bite of a species of mosquito, acting, as in the case of malaria, as the intermediary host to man, has thrown doubt on existing beliefs as to the means of transmission of the malady and has consequently also modified prevailing ideas with regard to its prevention. Major HAVARD, it is interesting to note, is a hard-and-fast believer in the views propounded by the American army *savants*, and moreover is extremely sanguine that, acting upon the knowledge of the cause of yellow fever, the task of eradicating both that disease and malaria from Havana will present no insurmountable obstacles. He agrees with Major REED that dirt and filth have nothing whatever to do with the spread of yellow fever except inasmuch as they may attract and feed mosquitoes, and he points out that Major REED and his colleagues conclusively proved by direct experiment that infected linen, bedding, and effects of all kinds are powerless to convey the disease. Major HAVARD cites as a strong argument in support of the truth of this contention that in Havana in 1900 no visible correlation could be seen between dirt and yellow fever, the district which first became strongly infected being one of the cleanest and best constructed, while the most insanitary wards became infected late in the season and only to a slight extent. Yellow fever did not follow the poor and unclean or the march of previous infections, but rather the movement of non-immunes. In fact, according to the new theory yellow fever is non-contagious and fomites are inert. With the morbific mosquito out of the way the disease cannot spread. Consequently the problem consists in the extirpation of the culex fasciatus, in the protection of yellow fever patients and all non-immunes with mosquito nets, and in isolation of patients. Disinfection is useless because there are no infectious germs to destroy, but fumigation by formaldehyde gas is recommended in a house in which yellow fever is present and where infected mosquitoes may be lurking. Again, assuming that the infectious germs do not exist except in man and the mosquito, disinfection of baggage is unnecessary and the duty of the quarantine official will be simplified to detaining non-immunes for five days immediately following their last exposure to infection and to fumigating the ship. The chief factors in the propagation of yellow fever being mosquitoes and non-immunes, measures to protect the latter are indispensable with a view to check the spread of the disease. Major HAVARD pertinently remarks that if immigration could be stopped for two or three years, and if during that period all germ-bearing mosquitoes could be destroyed, the city thereafter could be kept as free from infection as Kingston in Jamaica and San Juan in Porto Rico. But immigration cannot be stopped nor, probably, can the offending mosquitoes be extirpated with the comparative ease which certain optimistic persons seem to imagine. Much undoubtedly can be accomplished in Havana towards this result by the establishment of an efficient sewerage system, by a thorough drainage of the neighbourhood of the city, and by the protection of non-immunes by every means which lie in the power of the authorities. The inhabitants of this portion of the world, and especially of the Southern States of the Union and South America, as a whole, will watch the efforts to stamp out yellow fever in Cuba with the greatest interest. There can be no doubt that if, as Major REED and his coadjutors assert, the mosquito culex fasciatus is the only agency by which yellow fever is communicated to the human race the task of eradicating the disease will be rendered much easier.

Major HAVARD, at the end of his report, discusses the subject of immunity against yellow fever, and some of his remarks may arouse the attention of those who have made a study of the malady. He says: "Immunity is not enjoyed by all Cubans as popularly believed, but only by those residing in cities, not by those who have lived from infancy in the interior rural districts. In other words, immunity is only enjoyed by the residents of centres where yellow fever is endemic; it is not enough to have lived in a tropical climate, one must have lived in an infected locality. The inference therefore is strong that immunity is acquired only by an attack of the disease; there is no other infectious disease against which immunity is obtained in any other way and there is no reason to believe that yellow fever is an exception to that rule. Under the former belief that it was acquired by the absorption of germs through the respiratory passages it was possible to conceive the possibility of a very slow but constant infinitesimal absorption which might in time produce immunity without any apparent fever, but such a conception is no longer tenable if the germs are introduced directly into the blood by the mosquito. Those physicians who assume *a priori* that Cubans, whether they live in the city or country, cannot have yellow fever, decline

to recognise it when they find it in natives: they call it *fièbre de borras*, and consider it a special form of malaria which, strangely enough, only occurs in this island." It would be instructive in this connexion to hear the experience of physicians who have treated yellow fever in the British West Indian islands. The entire trend of Major HAVARD'S valuable report, it will be observed, is strongly to confirm the views of Major REED, and is thus, coming from one who has claim to speak with authority, another link in the chain of argument in favour of the new theory of the etiology of yellow fever.

Medical Ethics in France.

OUR readers doubtless noticed in the letter of our Paris correspondent in THE LANCET of April 27th, p. 1242, a statement of certain principles of medical deontology adopted by the Conseil Général des Sociétés d'Arrondissement. It is not inopportune to notice the increased attention which is being given to questions of medical conduct as distinguished from questions of medical practice or science, and the statement referred to is worthy of consideration on account of the time spent upon it and for the purpose of ascertaining whether there is any new principle in it or any new commandment binding on the practitioners of the present day which was not binding on their fathers. The deontological points enumerated by our Paris correspondent have reference mainly to the action of a medical man when he is summoned to see the patient of another practitioner and to the duties of consultants.

The first regulation prescribes that the practitioner called for the first time to a family and finding that he has only been summoned in the absence of the usual medical attendant shall only act as long as the absence of his professional brother lasts. In other words, he is not to take a mean advantage of his brother's absence to appropriate the case to himself. The second regulation deals with cases in which a medical man is called in in the absence of another medical man who has been treating the case and the patient expresses a wish for the future to retain his services. It is ruled that the new practitioner called in may go on attending the case provided that he informs the former medical attendant. In the third regulation the practitioner summoned in an emergency is enjoined only to prescribe such treatment as is immediately necessary, and not to return to the patient's house except in consultation with the usual medical attendant. This is, we think, a little too dogmatic. The case might be one of hæmorrhage, or of strangulated hernia, or of labour, and it might require repeated visits in the absence of the regular adviser. The fourth regulation requires a medical man summoned under the above circumstances to do his best to get the medical man hitherto in charge of the case retained, and in case of failure to inform the previous adviser. In all such cases it is well that the intimation of the patient's wish for a change should be given by the patient or by his friends rather than by the medical practitioner, though there is no reason why he should not privately and in a friendly way intimate the same to the medical brother whom he has superseded. Of course, it is to be assumed that he is a reluctant party to this displacement of a professional brother. If there be anything in professional morals and amenities it is that we are to be neighbourly, to be not only ready, but pleased, to help each other, to put the best construction on each others' work, and to take no advantage of what may be the temporary mood and adverse judgment of a patient with regard to his regular adviser. The man who does not so regard his duty to a medical neighbour has mistaken his calling and is not worthy of it. To hesitate about this, in the absence of any gross fault or carelessness on the part of a professional brother, is to ignore the first principles of medical ethics. Disease does not always respond immediately to the therapeutics of even the most experienced adviser. The new preference of the patient may be a mere whim due to peevishness or to disease. We shall all do well to remember these facts and to apply them in support of our brother practitioners. Any one who succeeds in vindicating a brother practitioner's character has done good service to his profession and gains more than is implied by the petty temporary acquisition of a new patient. If he fails and is obliged reluctantly to accept the case as contemplated in the second regulation he has at least done his duty, and has given proof to the laity that much as the true medical man appreciates a new patient he appreciates still more the obligations of his profession and the spirit of neighbourliness and mutual help in which they originate.

We must not omit to notice the last two regulations. The seventh regulation requires a practitioner to be generous in accepting as a consultant the practitioner proposed by the patient or by his family, whatever be his age or his status, "provided that his personal and professional honour is above suspicion." We highly approve of the wisdom of this suggestion. It is not for the practitioner in attendance to be critical as to the superiority of the consultant desired by the patient. He may give his general views on the matter, but he will act magnanimously if he seeks to satisfy and to please the patient. Even if the consultant is much younger than himself and of shorter experience he will do well to meet him with readiness. Nothing is more honourable to age than its appreciation of younger men, and perhaps the best consultations are those which involve such diverse advantages. We are not quite so sure about the eighth regulation, which tells us that the consulting-room is neutral ground where a medical man may give advice to anyone coming to consult him "without any regard to the medical man who usually looks after" him. Surely this is a doubtful doctrine that must be revised. The right of the patient to have whatever opinion he may prefer has been very properly vindicated in these regulations, and that may include the right to have the opinion of a consultant independently of that of his usual adviser. But "without any regard to the medical man who usually looks after him" is a very strong way of emancipating consulting practice from all obligations to general practitioners, and one of very doubtful advantage, we feel sure, to the patient. It is a new piece of medical ethics which will find no support in old authorities. We regard it with entire suspicion and disapproval, as tending to prevent that mutual and respectful coöperation in the diagnosis and treatment of difficult cases

which is so desirable, and, we are glad to add, so usual, on the part of the consultant and the general practitioner.

Annotations.

"Ne quid nimis."

THE CARNEGIE TRUST.

THE particulars of the trust-deed and constitution whereby Mr. Carnegie proposes to secure the benefits of his munificence to the Universities of Scotland and their students have now been made public. The scheme as thus formulated has two features which rivet attention and which commend it to us at least as strongly as does the list of carefully selected men of mark who are to be responsible for safeguarding and administering the revenues placed at their disposal. In the first place the executive committee, consisting of nine of the trustees, is to have a free hand—that is to say, it is to deal with the income of the trust at its own discretion, expending its moneys as it may think best so long as it keeps in view the main objects of the founder's munificence. The circumstances and requirements of educational life undergo constant changes. Developments may occur at any time in the near or distant future which the most far-seeing and studious observer of the present day could not by any means in his power forecast, so that to have tied the hands of the trustees of Mr. Carnegie's millions by accurately prescribing their duties to-day might have fatally interfered with the usefulness of their successors, who, as matters stand, will be able to adapt their measures to the educational needs of future generations without hindrance and without appeal to courts of law or other supervising tribunals. It would be easy to point to instances at our older public schools or in our universities of the gift of the donor who has tried strictly to limit its application, with the result that it has for long benefited no person or object in the manner which the giver intended, and that in the end the fund has attracted the attention of the Charity Commissioners who have had to devise or to sanction new objects of expenditure entirely remote from anything that the founder knew of or desired. The objects to which Mr. Carnegie's trust are to be devoted are divided into two general classes, so that one-half of the net annual income is to be applied towards the improvement and expansion of the Universities of Scotland in the faculties of science and medicine, also for improving and extending the opportunities for scientific study and research and for increasing the facilities for acquiring a knowledge of history, economics, English literature, and modern languages, and such other subjects cognate to a technical or commercial education as can be brought within the scope of the university curriculum, by the erection of buildings, laboratories, class rooms, museums or libraries, the providing of efficient apparatus, books, and equipment, the institution and endowment of professorships and lectureships, and by similar measures which we need not give in detail; while the other half of the income, or such part of it as may in each year be found requisite, is to be used for the purpose of defraying the educational fees of students of Scottish birth, within limitations given, a disposition for which the early announcement of Mr. Carnegie's intentions had prepared us. The prominence given above to science and medicine, and to the providing of opportunities for scientific and medical study shows how closely Mr. Carnegie and those who may have advised him have studied the subject which they had to deal with and appreciated the relative difficulties which beset education and those who desire to make it thorough and effective. We may fairly say that in respect of costliness of apparatus the education of the medical practitioner stands almost alone. In the preparation for other professions there are charges for lectures and tuition, and fees are paid for the privilege of observing the work of others. In the case of other professions as well as of medicine, books, sometimes expensive books, form part of the necessary equipment of the student, but the costly instruments, the microscopes, the subjects of dissection and experiment, the whole apparatus of chemical research, can hardly be said to have a parallel in the early career of the would-be clergyman or lawyer, of the business man, or the soldier. In the case of these others, moreover, the intelligence of the student may sometimes enable him to dispense with aids which are necessary to his colleagues, and thus to educate himself at less expense. But the student of science differs from these. The further he goes the further his ambition calls him, and the greater his intelligence the wider, and in consequence the more costly, becomes the field of his researches. The gift which we are discussing will mark an epoch in the educational history of Scotland, a country in which education has ever been held in high honour and esteem, but we have little doubt that it will be those who in future years are preparing themselves for the practice of the medical profession and for other scientific pursuits who will have best reason to recall with gratitude the name of Mr. Carnegie. In America, where that gentleman has amassed his wealth, the endowment of educational centres on a colossal scale and other large-minded schemes for the public welfare have far more frequently than with us afforded the means by which successful men of business have sought to commemorate their fame and to show their gratitude to the Providence which has favoured them. If the example of Mr. Carnegie is followed in these islands he may have done more than benefit the Universities of Scotland; he may have originated a movement with far-reaching results, and have instituted a practice by which our great universities and many other institutions of national importance may be glad to profit. The names which they commemorate on the occasions prescribed for the praise of departed benefactors usually belong to periods of more or less remote antiquity, certainly to dates when wealth was less common and less vast than it is now.

A DAY IN THE COUNTRY.

THIS is the time of year when appeals are made to the public charity for money with which to give London children "a day in the country." The question is raised whether such a day does not bring harm rather than good, crowded as it is with the excitement and the strain of compressing as much experience as possible into the sixteen or so available hours. The Rev. S. A. Barnett, writing from Toynbee Hall on this subject, believes that in these children's treats is laid the foundation of a system of "days off" for workmen which is anything but beneficial to those for whom such holidays are the only ones at present available. If there were fewer single holidays and the workman could have every year a fortnight's consecutive freedom from work and from town he would, in Mr. Barnett's opinion, lose the idea that excitement is the only possible form of pleasure. Whether a difference in the arrangement of his holidays could effect such a difference in the bent of the workman's mind is open to doubt, but all must agree that the day's holiday, whether for men or for children, might be better spent than in the crowded trains, the rush, the scrambling feeding, and the bustling excitement of the "excursion" or the "school-treat" with which we are familiar. In the case of children

it is incumbent upon the adults who conduct, as well as upon those who generally supply the funds for, the outing to see that the child's day in the country does not mean that natural sleep is curtailed by several hours, that the child is not herded into a carriage over-filled, is not crammed with food, hustled through games, re-packed into the carriage and brought back to London without having a chance of realising the quiet spirit, breathing the pure air, and noticing the gentle sweetness of the country side. It is not necessary for the holiday to be a long one to allow a London child to benefit by the country and to gain an impression which will dwell brightly in his memory for long days. Let him only be taken not too far a journey in not too great numbers and let him wander at his will in the quiet fields without being hurried into games or regulated sports. Even a few such free hours are full of physical and mental good for the child or the man who lives in a crowded city.

SIR WALTER BESANT.

THE late Sir Walter Besant was a philanthropist in the most literal sense of the word. He loved his fellow-men and spared no pains in their behalf. Of the most genial temperament and delighting in the happiness of others, the grey, depressing lives of the poor of London moved him to deep pity. A tireless worker, his heart bled for the seamstress whose day of labour was longer even than his own. A successful man from the opening of his literary career, his sympathy went out to all of his craft whose labours met with no return. His vision of a People's Palace to bring light into gloomy Whitechapel became a reality; his scheme for organising men and women of letters into a coherent body for the maintenance of their common rights resulted in that useful corporation, the Society of Authors. Of Sir Walter Besant as a scholar, a humourist, a novelist, and an antiquary much might be written and much will be written. But from a medical point of view it will suffice to say that the healthy recreation which his sane and beautiful stories brought to a vast circle of readers had its physical value, while his vivid and picturesque pourtrayal of eighteenth-century manners served to make us understand the processes of social evolution in a way that no dry-as-dust treatises could aspire to do. The death of such a man, devoted to well-doing, whose sanguine energy insured a practical effect for the dreams of his well-dowered brain, is a loss to the world, and we desire to pay tribute to our sense of this loss.

PUNCTURE OF THE KIDNEY FOR NEPHRITIS.

THE surgeon is ever invading the province of the physician, and so accustomed have we become to this that we hear without surprise of some new surgical method of treatment for a disease always hitherto assigned to the physician, but of all morbid conditions inflammation of such an organ as the kidney might have been thought the least likely to be subjected to the surgeon's knife. A few years ago Mr. Reginald Harrison, in his presidential address to the Medical Society of London, drew attention to the numerous cases which have been recorded in which a kidney has been cut down upon in expectation of some gross lesion being found and nothing of any importance has been discovered, yet decided improvement in the symptoms has followed the operation. Mr. Harrison suggested that the improvement was due to the relief of tension. This was a novel idea, but the results of the ordinary medicinal treatment of acute inflammations of the kidney are so unsatisfactory that we can only welcome any treatment which seems to offer a reasonable prospect of success. The subject is to be discussed at the Cheltenham meeting of the British Medical Association, the introductory paper being read by Mr. Harrison. We may hope to have the matter fully elucidated at that meeting. When we consider analogous cases we see how much damage may be done to delicate organs by mere increase of tension, and the damage is in a large degree proportionate to the tenseness of the capsule. In the eye a very slight increase of internal pressure suffices to damage irreparably its essential structure, and the name "renal glaucoma" has not inaptly been suggested for the truly analogous condition in the kidney. How far the operation of incision of the kidney can prevent or relieve the effects of congestion time alone can show, but the subject deserves the careful attention of all surgeons.

CHARING CROSS HOSPITAL: THE CHÈRE REINE LODGE OF FREEMASONS.

THE Chère Reine Lodge, No. 2853, was consecrated on June 7th at the Hotel Cecil, Strand, London, W.C., by V. W. Bro. Edward Letchworth, F.S.A., Grand Secretary, assisted by the following Grand Officers: R. W. Bro. Robert Grey, P.G.W., as S.W.; V. W. Bro. Edward Terry, P.G.T., as J.W.; V. W. Bro. Rev. Sir Borradaile Savory, G. Chaplain as Chaplain; W. Bro. Fitzroy Tower, as D.C.; and W. Bro. Woodhouse Braine, F.R.C.S., S.G.D., as I.G. The Chère Reine Lodge is the sixth lodge connected with medicine to be established in the metropolis and Charing Cross Hospital is the fifth of the London hospitals to associate itself with Freemasonry, following the good lead set by St. Bartholomew's, St. Mary's, the West London, and the Middlesex Hospitals. The officers appointed were W. Bro. Rev. A. W. Oxford, M.D. Oxon., P.G.D., Worshipful Master; Bro. John Abercrombie, M.D. Cantab., F.R.C.P., Senior Warden; Bro. Amand Routh, M.D. Lond., F.R.C.P., Junior Warden; W. Bro. J. Astley Bloxam, F.R.C.S. Eng., I.P.M.; W. Bro. C. E. Wright, Chaplain; R. W. Bro. Robert Grey, P.G.W., treasurer; Bro. C. Carter Braine, F.R.C.S., secretary; Bro. Frederick Wallis, M.B. Cantab., F.R.C.S. Eng., S.D.; Bro. Victor Corbould, M.D. Brux., J.D.; Bro. J. W. Eyre, M.D. Durh., I.G.; W. Bro. Arthur E. Reade, Organist; and Bro. P. L. Daniel, F.R.C.S. Eng., and Bro. J. Humphreys, L.D.S. Eng., Stewards. After the ceremony of consecration and the conclusion of business the Founders entertained their numerous guests at a banquet. The usual loyal toasts having been duly honoured the W. Master proposed "The Consecrating Officers" which was suitably acknowledged by the Grand Secretary. "The Worshipful Master" was proposed by W. Bro. Astley Bloxam, and W. Bro. Oxford in replying modestly regretted that he was filling a post which ought to have been occupied by one of the staff of the hospital had circumstances permitted. He then proposed the toast of the "Visitors," which was responded to by W. Bro. Surgeon Lieutenant-Colonel Kiallmark, W.M. of the University of London Lodge, W. Bro. L. Bidwell, F.R.C.S., W.M. of the Cavendish Lodge (West London Hospital), and W. Bro. A. E. Sansom, M.D. Lond., F.R.C.P., who is W.M. designate of the Lodge shortly to be founded in connexion with the London Hospital. "The Officers of the Lodge" was acknowledged by Bro. Abercrombie, Bro. Routh, and Bro. Carter Braine, the last-named remarking that although it might be imagined that the name "Chère Reine" had been adopted in connexion with the name of the hospital this was not actually so. It was rather selected because one of the crosses erected by King Edward I. to commemorate the route of Queen Eleanor's funeral procession was at the village of Charing, near to Westminster Abbey, and because it was thought that the recent death of Her Majesty Queen Victoria, who was Patroness of Charing-cross Hospital, would make "Chère Reine" a doubly appropriate designation for their lodge. We have no doubt that the experienced

and able guidance of its first Master will prove of great assistance to the Chère Reine Lodge in starting on a career which there can be no doubt will be one of usefulness and success. At all events, it will have the hearty good wishes of every medical Freemason.

THE CORONERSHIP OF THE CITY OF LONDON.

AT a meeting of the Officers and Clerks Committee of the Corporation the three following gentlemen were placed upon the selected list of candidates for the City Coronership—Dr. Major Greenwood, Dr. H. R. Oswald, and Dr. F. J. Waldo. All three of these gentlemen are barristers as well as members of the medical profession and we feel that we cannot do otherwise than congratulate the Corporation of the City of London on their choice. We have placed the names alphabetically and, so far as we are concerned, shall be pleased to see any one of the three candidates successful. Although Dr. Oswald is the only one who has already had experience in the actual office of coroner, both Dr. Greenwood and Dr. Waldo have, we believe, assisted Dr. Danford Thomas in a large number of inquests. The final election will take place at a meeting of the Court of Common Council on Thursday, June 20th.

THE DEVON AND CORNWALL ASSOCIATION FOR THE PREVENTION OF CONSUMPTION AND OTHER FORMS OF TUBERCULOSIS.

THIS society appears to be doing good work in the West of England. It is well that everyone should have definite knowledge as to the cause of preventable disease and the general spread of information on this subject is not the least valuable part of the work of the society. The Earl of Mount Edgcumbe who presided over the annual meeting which was lately held at Plymouth gave in his opening speech a *résumé* of some of the methods by which pulmonary tuberculosis is spread, and this information generally disseminated by means of the western morning papers is likely to be productive of unmixed good. According to the annual report given by the Executive and Sanatorium Committee of the society the total number of deaths from pulmonary tuberculosis which occurred in Devon and Cornwall amounted during last year to 1000. It was estimated that 3000 persons were suffering from the disease, but it is not easy to imagine how reliable statistics on this matter could be obtained under existing circumstances. The committee advise that a sanitary staff shall be appointed to assist the voluntary efforts for the prevention of tuberculosis. It was also suggested that a bacteriological laboratory for the early diagnosis of the disease and a home for advanced cases were wanted. The chief practical work of the committee has been directed to making preliminary observations as to the provision of a sanatorium and it seems that at present there is not entire agreement as to the best method to be adopted, there being a difference of opinion as to whether one sanatorium should be built or whether each of three districts should have a separate sanatorium. This is a matter on which local considerations must of course prevail, for those who give the necessary money will naturally feel that they have a right to decide how it can be spent to the best advantage. The Earl of Mount Edgcumbe stated that the County Council of Cornwall had promised to subscribe to the association to the extent of £50 per annum for two years, but a question has arisen as to the legality of this grant. During the course of the debate which was held on the annual report which was presented to the meeting some interesting remarks were made by Dr. Lionel A. Weatherly, chairman of the Executive Committee of a similar association which has been formed for the counties of Gloucester, Somersetshire, and Wiltshire. Dr. Weatherly stated that his association had decided to build a sanatorium for the accommodation of 60 patients and he was strongly of opinion that the constant supervision of a medical man was necessary to ensure the best results to the patients who were under treatment. The beds were to be allotted to the three counties named and to the city of Bristol, the arrangement being that each of these districts should have a right to send 15 patients. The cost of maintenance of the institution was to be provided in part by a system of insurance under which clubs would contribute a weekly payment according to their numbers. The estimated cost of the sanatorium was £65 per bed per annum and it was expected that the chief trouble would not be in getting the necessary money but that it would arise rather from the excess of patients from whom the selection would have to be made. In the case of poor patients Dr. Weatherly said that they would not ask their friends to contribute more than 10*s.* per week. Boards of guardians, he thought, ought not to be allowed to subscribe for a bed, firstly on the ground that it was undesirable to "mix up different classes of poor patients," and secondly, because guardians could treat their patients "in the workhouse grounds." There are, it is to be feared, in Devon and Cornwall many poor patients who could not afford a payment of 10*s.* per week, a sum which in some places is the exact amount of the weekly wages of a labourer. After a long discussion it was proposed that separate committees should be formed in Exeter, Plymouth, and Truro, with a view to take measures to establish, and eventually to control and to manage, a separate sanatorium for each of the three districts. The mayor of each of the towns named was to be asked to convene a public meeting for the purpose of appointing such committee, and each committee was to act independently. As we have stated, the meeting differed as to whether there should be only one sanatorium or three separate institutions, and it was finally resolved that this question should remain undecided. Local and financial as well as sentimental reasons will doubtless affect the decision ultimately made as to the place or places selected and the solution of this question can be confidently left to those who are acquainted with all the circumstances.

THE CHOICE OF CLIMATE IN PULMONARY TUBERCULOSIS.

ONE of the most frequent questions that a physician has to answer is as to the climate that should be selected for the residence, temporary or permanent, of a patient suffering from pulmonary tuberculosis. The views of physicians have changed considerably with the lapse of years as to the mode of life which should be adopted by patients afflicted with this disease. At one time warm climates were recommended, at another cold, dry regions were chosen, and within the last few years the "open-air" treatment has led to further modifications in their views, and many authorities contend that numerous situations in this country are quite suitable as sites for sanatoria in which this form of treatment may be carried out. In a paper by Dr. W. Gordon, entitled "The Practical Choice of Climate in Phthisis," which will be found at p. 1677 of our present issue, the position of climate in its relation to tuberculosis is carefully considered. May we here again express our opinion that the term "pulmonary tuberculosis" is preferable to that of "phthisis" as expressing in exact terminology the nature and site of the disease? Dr. Gordon briefly reviews some points in the controversy which he aptly terms "sanatorium *versus* climate," and argues, quite soundly, that it would be an act of folly to discard the assistance which a climate of proved value can afford to rational treatment, and quotes statistics demonstrating the results that have been obtained in the different

"stages" of the disease in various climates. We believe that many fallacies have probably crept into these figures owing to the want of unanimity in deciding as to the meaning of the "first, second, and third stages" respectively of pulmonary tuberculosis; but with that point we are not at present concerned. The remarks to which we would particularly draw attention are those on "home climates." These are eminently worthy of perusal. Dr. Gordon says that sites chosen for sanatoria should satisfy those conditions which experience has shown to be important for success. He then briefly states such conditions: a dry soil, pure air, abundant sunshine, the absence of wind (especially "wet wind"), the absence of dust, the absence of fog, and the avoidance of the immediate sea-front, by which he does not mean, however, an avoidance of the seashore. These suggestions will recommend themselves to all physicians who have had experience in this form of treatment. Dr. Gordon also urges that those areas should also be selected where there is a naturally low mortality from pulmonary tuberculosis. There is another point that might have been referred to—namely, that the "open-air" treatment is at present mainly open to the wealthy. We trust, however, that the time is not far distant when suitable sanatoria may be built for that class of patients who are unable to afford the fees now requisite for the support of the existing sanatoria. Efforts are already being made in this direction, the Hospital for Consumption, Brompton, being one of the foremost in preparing to establish a branch in the country for the treatment of early cases of the disease.

THE DETECTION AND DETERMINATION OF ARSENIC.

THE recent beer-poisoning epidemic has led to an enormous number of contributions on the chemistry of arsenic, on its detection, and on its determination. And we are by no means sure that the issue has been cleared. Some chemists are in favour of one method and some in favour of another, fallacies are pointed out in methods previously held to be exact, and discarded methods have come to the front again, being, as it is asserted, made more accurate by some modification in detail. Again, even assuming that we have a certain and trustworthy method for the detection of arsenic we yet await a consensus of opinion as to the method which will give accurate quantitative results in cases where the arsenic present is in infinitesimal amount. All contributions towards the elucidation of this aspect of the problem must be welcomed, for the issue is of the utmost importance. We are glad, therefore, to find that the council of the Society of Chemical Industry have thought it desirable to republish in pamphlet form the papers, discussions, and abstracts which have recently appeared on this subject in the columns of the society's journal. The reprint is most instructive and should be of the greatest value to those possessing a practical interest in the subject. It furnishes at once a guide to the best methods for detecting and determining arsenic and the other poisonous elements associated with it. It contains also abstracts of analytical methods from various scientific publications. The publication, too, of the scientific discussion on the subject is most valuable. Some idea of the contents of the reprint may be gained from the following synopsis:—The Determination of Arsenic and Antimony in Cupreous Materials; the Discussion on the Occurrence and Detection of Arsenic in Manufactured Products at a Meeting of the London Section of the Society; the Effect on the Marsh Test of some Commercial Products containing Selenium and Tellurium; Arsenic in Coal and Coke; the Detection of Arsenic in Beers, Brewing Materials, and Food; the Discussion (at the Manchester Section) on the Need of a Standard Test for Arsenic; the Discussion on the Presence of Arsenic in Beer (Nottingham Section); the Presence of Arsenic in Beer (New York Section); the Determination of Minute Quantities of Arsenic in Coke (Nottingham Section); and Arsenical Beer and Malt (Yorkshire Section). An interesting addition to the literature of the subject is the original description of Marsh's test in the author's own words, together with the modifications proposed by Berzelius, Fresenius and von Babo, and also by Otto. From a perusal of this reprint we do not seem to be nearer to the solution of the problem as to whether arsenic *per se* is responsible for the whole of the trouble. The interesting facts, however, have been brought out that a penicillium can extract arsenic and that a sample of Bostock's sugar has been found to develop a greenish mould and to give off an odour of garlic with just a suggestion of phosphorus. A word of thanks is due to the council for publishing in separate and convenient form this interesting contribution on the detection and determination of arsenic. Copies may be obtained from Messrs. Eyre and Spottiswoode, East Harding-street, E.C.

HYGIENE IN GERMAN SCHOOLS.

IT is generally admitted that continental schools, although their educational reputation may be well-deserved, nevertheless leave much to be desired from a hygienic point of view. We are therefore glad to observe that in Germany a movement is in progress for the improvement of the hygienic condition of schools throughout the empire. The Allgemeiner Deutscher Verein für Schulgesundheitspflege (General German Association for the Promotion of Hygiene in Schools) has been in existence for rather more than a year and held its second annual meeting at Wiesbaden on May 31st, when the following interesting subjects, among many others, were discussed: (1) the new Prussian school reform in relation to school hygiene; (2) the general conditions of school hygiene, with reference to Wiesbaden in particular; and (3) school hygiene in relation to infectious diseases, especially tuberculosis. That this association meets a want is now recognised, for the *Berliner Tageblatt* of May 25th announces that an association of very similar character and aims has quite recently been founded in Berlin.

GWYNNE v. GREVILLE.

AN interesting case has recently occupied the attention of the Lord Chief Justice and a special jury in the Court of King's Bench. The action was brought by Mrs. Agnes Gwynne and her husband against the Medical Electro-Thermic Generator Company, Limited, and Mr. A. E. Greville. The latter gentleman is a solicitor and the managing director of the defendant company, being also the inventor and patentee of the bath. Put shortly, it is an apparatus whereby dry highly-heated air can be applied to a limb or other parts of the body. Mrs. Gwynne had two baths which were applied to her legs without any harm arising. During a third bath, which was applied to other parts of the body, Mrs. Gwynne was severely burned owing to the bath not having been properly packed. Evidence was given that enough lint was sent to pack the bath properly, but evidence was also given to the effect that no lint was sent. Whichever statement was correct it is obvious that the lint was not used. The bath was applied by a nurse whose sole experience of such baths was that she had been present at the giving of the first two baths. It is fair, however, to mention that Mr. and Mrs. Gwynne objected to paying the fee for the experienced nurse sent out by the company, and preferred their own. At the third bath Mr. Greville, jun., was present, but he did not see for himself

whether or not the bath was properly arranged, but merely asked Mrs. Gwynne if she was properly packed. She replied in the affirmative and he then turned on the current. In the end the jury found for the plaintiffs with one farthing damages. The personal liability of Mr. Greville was not considered but only that of the company. We are sorry for Mrs. Gwynne, but the case is only one more example of the foolishness of making use of powerful agents without medical supervision. The lesson which it teaches is, to our minds, that medical men should not only be content with advising the application of such remedies, but should supervise their application. The company, too, would be well advised if they were to refuse to apply their apparatus without the supervision of the patient's medical man, or at any rate of some one delegated by him.

DINNER TO SURGEON-GENERAL JAMESON, C.B.

WE are glad to be able to announce that at a recent meeting it was determined that a complimentary dinner should be given to Surgeon-General Jameson, late Director-General of the Army Medical Service. On another page we print a list of names of distinguished and representative members of the profession who are interesting themselves in the movement. The list already includes the names of the President of the General Medical Council, the Presidents of all the various Royal Colleges of Physicians and of Surgeons in the United Kingdom, many well-known members of the staffs of English, Scotch, and Irish hospitals, and most of the gentlemen who served as consulting surgeons to the forces in the war in South Africa. Such a compliment as is implied by this dinner cannot fail to be gratifying to Surgeon-General Jameson, testifying as it does to the high appreciation in which he is held by the whole body of the profession to which he belongs. We trust—indeed, we feel sure—that the gathering will prove a brilliant success.

THE REDUCTION OF TEMPERATURE IN FEVER BY "EVAPORATION BATHS."

IN the *Journal of the American Medical Association* of May 18th Dr. Francis H. Williams describes a method of reducing temperature in fever by "evaporation baths," which he claims are much more comfortable than the ordinary cold bath. The method is similar to that which has been used for many centuries in hot countries to cool drinking-water. To ascertain its efficiency Dr. Williams took a large bottle holding about a gallon of water at a temperature of 104° F. and wrapped it in surgical gauze which he sprinkled with water at the temperature of the room, at the same time continuously fanning the bottle with an electrical fan. He found that the water in the bottle could be cooled in half an hour about 24°F. below its initial temperature of 104° F., the temperature of the air in the room being 70° F. He also varied the number of layers of gauze covering the bottle and found that one or two gave better results than a greater number. He also compared electrical fanning with hand fanning and found that the temperature was reduced much more by the former. In private practice hand fanning is quite feasible, in a hospital the electrical method is better. To compare the effects of ice water with warm water, Dr. Williams placed two gauze-covered bottles in the same current of air and kept one wet with water at 100° F. and the other with ice water. At the end of half an hour the difference in temperature of the bottles was only 1° F. Hence the slight increase in cooling obtained by sprinkling the patient with cold instead of warm water does not counterbalance the discomfort of the former. Moreover, the warm water has the advantage of attracting the blood to the surface of the body. The method of giving the bath is as follows. A rubber cloth or woollen blanket is put under the patient. Strips of coarse gauze are then placed on him in a single layer sufficient to cover three-fourths of the legs, arms, and trunk. The gauze is sprinkled with water at a temperature of 110° F. and is kept wet, and the patient is fanned. In the first bath it is well to use a pint of water and in subsequent baths to be guided by the effect of the previous one. The time required for evaporation varies with the amount of moistening in the air. It is better to be guided by the quantity of water evaporated than by the time taken. The doors of the room should be kept open and the windows also in warm weather as long as the temperature is 102°F. or more. The patient should have as little clothing as possible, only a sheet, and in private practice he may be without covering. The average reduction in temperature obtained by 22 baths given in July to patients suffering from typhoid fever was 2·6°; the time required for each bath varied from 15 minutes to half an hour and the amount of water used was about a quart. The temperature was taken in the mouth and the maximum reduction was sometimes not obtained for one or even two hours after the bath. Once the temperature fell 4° and once 5°. In giving these baths the possibility of weak patients collapsing should be borne in mind. Dr. Williams has used this method with great success in typhoid fever and pneumonia. The delirium became less and the patient slept better. The following case is an example. A strong man had typhoid fever with a temperature frequently above 103°F. during three weeks. He was given the baths twice or thrice a day, or whenever the temperature reached 103°. Each bath lasted about half an hour and about a quart of water was used. The average reduction of temperature in ten baths was 2·2°.

"TO KILL THE INSECTS."

AMONGST many popular fallacies none, perhaps, is more pernicious or more tenaciously held than that the addition of spirits to water "kills the insects in it." While some doubt is entertained as to the character of plain water, yet all risk of swallowing germs is supposed to be avoided by drinking the water plus an addition of whisky or other spirit. In other words, the whisky is assumed to sterilise the water and to make it germ-free. It does nothing of the kind. Some organisms, and certainly their spores, will live in alcohol of nearly 75 per cent. strength, which is considerably over the strength of most spirits consumed. The common alcoholic strength of whisky is about 40 per cent., of brandy 42 per cent., and of rum not usually more than 50 per cent. Even supposing, therefore, that these spirits are consumed "neat" no security from germ life would necessarily be gained. It is quite certain that microbes can live and thrive in the ordinary mixed drink of whisky-and-water, the average amount of alcohol in a tumblerful of whisky-and-water, in the proportion usually adopted, being not more than 10 or 11 per cent. Bacteriological investigations have shown that most germs are not affected by a liquid containing 22 per cent. of alcohol, whilst their corresponding spores are unharmed in 33 per cent. alcohol. Alcoholic drinks therefore cannot be regarded as effectual destroyers of microbe life, and, further, bacteria after a time seem to get accustomed to alcohol and to become proof against any antiseptic action that it originally may have possessed. But whisky is often mixed with mineral or aerated water, and in this case there is another factor to deal with—namely, carbonic acid gas. There is no doubt that carbonic acid gas dissolved under pressure in water has a marked antiseptic action, for aerated waters have been found in many cases to be sterile. It would appear, however, that the germicidal action of the gas is slow, and thus natural mineral waters

in which the gas has been in very long contact with the water are more likely to be germ-free than freshly and artificially impregnated waters. It is probable that it is not carbonic acid gas that is *per se* destructive to germs, but the definite compound which it forms with the water—namely, true carbonic acid. It is well known that mineral acids are germicides, and in many respects water which is highly charged with carbonic acid gas behaves as a mineral acid. The highly resistant anthrax bacillus and its spore are not, however, affected by carbonic acid, but according to the results of several scientific inquiries the gas in mineral waters is certainly destructive to the pathogenic bacteria—as, for example, those of typhoid fever and cholera. It would be rash, however, to place confidence in either alcohol or carbonic acid as safeguards against pathogenic organisms or to regard whisky-and-water as safer than plain water, while the addition of soda-water is not necessarily to be relied upon to remove bacterial taint.

THE UNIVERSITY OF LONDON.

THE organisation of the University is now practically completed so far as its senate, academical council, faculties, and members of convocation are concerned, and these bodies are engaged in drawing up new regulations for the future conduct of the University. The medical schools have been asked to consider if any, and which, of the preliminary scientific medical studies can be concentrated at one or more centres, but the difficulties in regard to any effective concentration are very obvious. Technical schools for engineering in West Ham and for tanning in Bermondsey have been strongly urged by a correspondent in the *Times*, but assuredly the senate will first deal with university training and scientific research, leaving technical schools in so-called "applied science" to be founded afterwards. The University of London must be truly scientific in its training and methods.

THE LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

THAT energetic society the Liverpool School of Tropical Medicine is sending out another expedition to Sierra Leone. At present the members of the expedition are Major Ronald Ross, I.M.S. (retired), F.R.S., and Dr. Logan Taylor, and they will endeavour to ascertain whether mosquitoes of all kinds can be largely reduced in numbers by a year's effort at a reasonable price. A Glasgow donor has given a sum of £1000, and passages, together with plant for mosquito killing, such as oil, cement, chlorine compounds, and insect fumigators, have been provided by Mr. A. L. Jones, Mr. John Holt, Mr. Max Muspratt, Messrs. Hignett Brothers, and others. There are funds enough in hand to maintain, if necessary, 30 native assistants, and measures have been devised for accurately gauging the decrease in the number of mosquitoes. The expedition sails by the *Axim* to-day (Saturday). On June 6th a dinner was given by Mr. A. L. Jones, the president of the school, when a number of guests met at the Adelphi Hotel, Liverpool, to wish Major Ross and his companion good-bye. Mr. Jones presided and among the guests were the Lord Mayor, the Lord Bishop of Liverpool, Professor Rubert Boyce, Surgeon-General Harvey, Dr. H. E. Annett, Dr. Fielding Ould, the United States Consul, the French Consul, the German Consul, and many others. After the royal toasts had been given the chairman proposed "The Expedition," coupling with it the names of Major Ross and of Mr. Swanzy. He pointed out how much the Liverpool School of Tropical Medicine had already done and paid a warm tribute to the work of Professor Boyce. The expedition that was about to start was one of the most important that had ever left these shores and any discoveries which might be made would be used for the benefit of the whole world. We must congratulate Liverpool upon the energy and munificence of her citizens. Such good work has already been done in the matter of malaria that we may hope at no very distant date to see that West Africa has lost the unenviable title of "The White Man's Grave." All honour to those who spend their money and their time and risk their lives in the attempt to bring about so desirable a result.

MR. GEORGE HERRING'S MUNIFICENCE.

AGAIN we have to chronicle the princely generosity of Mr. George Herring to the Metropolitan Hospital Sunday Fund. The Lord Mayor in his letter which we publish to-day announces that Mr. Herring for the third consecutive year has contributed a donation of £10,000 to the Fund. What such a sum as £10,000 means when devoted to the needs of the suffering poor, what it represents in succour to them in their sorest need, can hardly be imagined. And the value of the gift is enhanced in our eyes by the method of its giving. Simply and without condition Mr. Herring hands this great sum to the Metropolitan Hospital Sunday Fund, feeling certain that in this way it will be distributed so as to secure for the objects of his charity the maximum good. This is exactly the view that we want the public to take. In the Metropolitan Hospital Sunday Fund and the Prince of Wales's Hospital Fund for London we have two institutions which by minute and careful investigations arrive at an intimate knowledge of the work done by all the London hospitals. They know the proportionate needs and deserts of all the institutions, so that money distributed through their agency is sure to reach the place where it will do the most good.

PLAGUE IN CAPE COLONY.

A TELEGRAM received at the Colonial Office on June 6th gives the following statistics of plague at Cape Town for the week ending June 1st:—Fresh cases: Europeans, 2; coloured persons, 5; Malays, 0; Indian, 1; Chinese, 0; natives, 3; total, 11. Corpses found: Europeans, 2; coloured persons, 3; Malays, 0; Indian, 1; Chinese, 0; natives, 1; total, 7. Deaths (including corpses found): Europeans, 2; coloured persons, 4; Malays, 0; Indians, 2; Chinese, 0; natives, 2; total, 10. The total cases up to June 1st are as follows: Europeans, 173; coloured persons, 309; Malays, 48; Indians, 11; Chinese, 1; natives, 142; total, 684. The total deaths have been: Europeans, 57; coloured persons, 159; Malays, 35; Indians, 8; Chinese, 0; natives, 59; total, 318. The area of infection remains the same. Seven cases have so far occurred at Port Elizabeth, including 1 suspect.

THE BRITISH CONGRESS ON TUBERCULOSIS.

ALTHOUGH the details of some of the "functions" are not yet completed, a number of arrangements have already been made. The principal railway companies in Great Britain have consented to issue return tickets at a single fare and a quarter, minimum 1*s*. Such tickets will be available from the day before to the day after the Congress, Sunday being considered a *dies non*. On the evening of Monday, July 22nd, the opening day of the Congress, a reception will be held by the Organising Committee in the Queen's Hall, when the band of the Royal Engineers will be in attendance. On Tuesday, the 23rd, Professor Koch will address a public meeting in St. James's Hall, and in the evening a reception will be held by the Lord Mayor in the Mansion House. On Wednesday afternoon, the 24th, Professor Brouardel of Paris will address a public meeting in St. James's Hall at 3 o'clock and from 4.30 to 7 P.M. the Ladies' Reception Committee will give a garden party in the Royal Botanic Society's

Gardens. On Thursday afternoon, the 25th, the Earl and Countess of Derby will give a reception, and on Friday afternoon Sir J. Whittaker Ellis will entertain members and their friends at a river party at Richmond. On Saturday, the 27th, excursions will be arranged to sanatoria and other places of interest and in the afternoon the Duke of Northumberland will give a garden party at Syon House. The work in the various sections will proceed from 9.30 A.M. to 2 P.M. on all days during the Congress, from Tuesday to Friday inclusive. During the period of the Congress some of the largest private houses in London with interesting collections of pictures will be thrown open to visitors.

THE BOTTLE IN THE PATH.

"A MOTHER" has addressed to one of our contemporaries a timely and sensible appeal against the practice of throwing away or breaking bottles on the beach at seaside resorts. She quotes the case of her own child whose foot was very seriously injured by treading on a piece of broken glass thus carelessly thrown aside. Her proposal that this matter should be dealt with by local councils is an eminently practical one. If, as she suggests, appropriate notices were freely exhibited and bins were placed at intervals near the beach for the reception of empty bottles and the like the rambling tripper would have no excuse for leaving such dangerous mementoes in the path of barefoot children. It should not, indeed, be needful to provide such receptacles and any such concession to the careless convenience of individuals must be a mere matter of favour. No one has a right to throw about a public place any object which may cause injury to the passer-by. A prohibitory notice, or as many as may be advisable, with a penalty included, would, however, be no more than fair in the public interest. It is well to remember that the dangerous practice referred to is not confined to the sea beach. How commonly does one meet with broken glass and bottle-ends recklessly strewn about on suburban roadways. The feet of horses are in constant danger from this cause. The care of roads and streets is generally understood to be included among the duties of borough councils. It seems to us, therefore, not a little strange that means are not used by these local authorities to prevent this culpable and mischievous habit of throwing glass in the way of passengers and traffic. A by-law on the subject, especially after being suitably illustrated with a few convictions, would materially aid in assuring the safety of a long-suffering population and its four-footed servants.

THE ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

AT a recent meeting of this society, the President, Dr. F. W. Pavy, LL.D., F.R.S., announced that the society had been honoured by a gracious intimation that His Majesty the King would grant its representatives an audience for the presentation of the society's loyal address of condolence and congratulation. Accordingly the President, with Lord Lister (the mover of the address) Sir William S. Church, and Mr. J. Warrington Haward (honorary treasurers), Sir Thomas Barlow and Mr. Clinton T. Dent (honorary secretaries), and Mr. A. Pearce Gould (late honorary secretary), attended at St. James's Palace on March 20th. The deputation was honoured by a private audience, His Majesty receiving the address personally and handing the President the following reply:—

I have received with the greatest satisfaction the loyal and dutiful address which you have laid before me to-day, expressing devotion to my throne and person and sympathy with me and my Royal consort in our grief.

The spontaneous expressions of loyalty and goodwill which have reached me from all parts of my empire and all classes of my subjects have been a powerful encouragement to me in undertaking the cares and labours surrounding the throne which I have inherited from my beloved mother; and with her example before my eyes I shall spare no effort to secure the continuance of the prosperity which attended her reign.

The President, with the proposer and seconder of the address, kissed hands, and the other members of the deputation were introduced to His Majesty by the President. A few days later the following letter was received:—

Buckingham Palace,
27th March, 1901.

GENTLEMEN,—I have the honour to inform you that I have submitted to the King your letter of the 21st inst., and in reply I am commanded to say that His Majesty is pleased to accede to the request contained in it to grant his patronage to the Royal Medical and Chirurgical Society.

I am, Gentlemen, your obedient servant,
D. M. PROBYN, General,
Keeper of His Majesty's Privy Purse.

Since then the society has been informed that the King would be graciously pleased to add his signature to the roll of the society.

THE OFFICE OF DIRECTOR-GENERAL OF THE ARMY MEDICAL SERVICE.

ON application to the Secretary of State for War we have been courteously informed that "no appointment has yet been made to the post of Director-General, Army Medical Service." The matter is one of great interest to the medical profession as a whole, and we trust that there may not be any prolonged delay in making the appointment. The fact that the post has already been vacant for a considerable time has not unnaturally given rise to various doubts and conjectures which it is desirable should be set at rest as soon as possible. We trust, therefore, that the War Minister may see his way promptly to come to a decision and to make public announcement of his decision at an early date.

IT is announced that the following have been appointed on a committee to consider the amendment of the first schedule annexed to the Pharmacy Act, 1868:—The Right Hon. Sir Herbert Maxwell, M.P., F.R.S. (chairman), Mr. Alexander Cross, M.P., Professor T. E. Thorpe, C.B., F.R.S., Professor W. A. Tilden, F.R.S., Dr. Thomas Stevenson, Mr. William Martindale, F.C.S., and Mr. J. H. Harrison.

SIR HENRY E. ROSCOE, Vice-Chancellor of the University of London, will on July 10th formally open the new Pathological Institute at the London Hospital. Subsequently, in the library of the school, prizes will be distributed to students and nursing probationers.

SIR MICHAEL FOSTER, K.C.B., M.P., will present the awards at the annual presentation of prizes to the students of the medical school of St. Mary's Hospital on Thursday, June 27th, at 4 P.M.

THE annual banquet of the Association of British Postal Medical Officers will be held in the Whitehall Rooms of the Hôtel Métropole, London, S.W., on Wednesday, July 3rd, at 7.30 P.M.

THE ROYAL BRITISH NURSES' ASSOCIATION.—On June 9th Sir James Crichton Browne presided at the annual meeting of this association at the Imperial Institute. Mr. J. Langton, the treasurer, presented the financial statement, reporting that the income compared favourably with the receipts of previous years. Of the £1552 received from the café chantant at the Hotel Cecil, £1350 had been invested and the interest would be devoted for the benefit of nurses who might be in need of assistance. Mr. Langton asked for increased support for the Settlement Fund, the object of which is to provide a home for retired nurses unable longer to pursue their calling.

THE ELECTION TO THE COUNCIL OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

ON Thursday, July 4th, the Fellows of the Royal College of Surgeons of England will exercise their privilege of electing to the Council three of their number. As is the case with most other privileges, this is closely associated with a duty, and it behoves all Fellows who appreciate the importance of the trust committed to their charge so to vote as to benefit in the highest degree the science and art of surgery, the medical profession, and the public at large. It may safely be said that no other medical body in this country has more influence on the trend of medical education as the Royal College of Surgeons of England, and this is due both to the large number of its *alumni* (for there are 20,000 Members of the College and almost 1500 Fellows) and to the position it has attained in the estimation of the people.

The government of this large and important corporation is vested in the Council of 24 members who must be Fellows. They are elected by the whole body of Fellows and therefore the control of the College is practically in the hands of the Fellows should they choose to exercise it, for every year there are at least three vacancies on the Council to be filled at the election in July, and if the Fellows were alive to their opportunities and responsibilities they could have a real voice in the government of the College, but many of them know little and care less of what occurs in Lincoln's Inn Fields, and the many crying needs of the College are unfulfilled and neglected. At one time there was some excuse for the practical non-participation of the great body of the Fellows in the election of the Council, for less than 20 years ago it was necessary for the Fellow to attend in person to record his vote, and, being much occupied with many calls on their time, it was not surprising that a large proportion of even the London electors were unable to be present at the College at some time in the two hours during which the poll was open; and for country Fellows voting was still more difficult, for the journey to and from London in many cases occupied the greater part or even the whole of the day. Now, however, the arrangements are very different, for the Fellow can vote by post, and so very easy has it been made for him that it is now not even necessary for him to apply for a balloting paper, for it is sent unasked to every Fellow of the College in the United Kingdom whose address is known. This paper has merely to be marked, signed, and the signature witnessed, and the paper posted to the secretary, but so apathetic are the Fellows, so regardless of their privilege, that at no election have more than half the Fellows recorded their votes. Full and clear directions are given with each balloting paper, and the Fellows are a highly educated body of men, yet at every election some votes are lost by incorrect fulfilment of the very simple rules laid down. Balloting papers are returned without signature, without any indication as to the candidates voted for, or with too many names.

There is yet another and a most striking indication of the apathy of the Fellows with regard to the work of the College. A few years ago it was felt that meetings of the Fellows should be held from time to time at which subjects of importance to the Fellows and to the College could be discussed and at which the Council could lay before the Fellows important matters for the purpose of receiving their opinion. After years of work the institution of regular meetings of the Fellows apart from the Members of the College was obtained from the Council, and two meetings were appointed to be held every year in January and July. For a few meetings the numbers present and the subjects discussed justified the establishment of the meetings. The numbers, however, steadily dwindled and for the last three years it has been found impossible to obtain the presence of the 30 Fellows necessary to form a quorum. Time after time the President, the Vice-Presidents, and a few Members of Council and other Fellows have assembled in the theatre of the College and waited for a quorum, but they have waited in vain. As a result the Council has decided to do away with the January meeting, and it is possible that the July meeting also may be discontinued if the Fellows do not display more desire for its existence. The Council would still possess the power of calling a meeting of the Fellows when it desired to lay before them any subject of special importance, but this is very different from regular meetings.

The Fellows form a large body of highly educated and trained surgeons and their collective wisdom on matters both of College politics and the affairs of the whole profession would be well worth obtaining. There are especially two subjects on which the Fellows should express an opinion, both for the guidance of the Council and for the sake of the medical profession. The first matter on which their opinion is desired is the question of the representation of the Members of the College on the Council. It may be said that the Fellows have already voted on this subject. It is true that four years ago the Council sent round to the Fellows a series of questions relating to the representation of Members and that a majority of the replies received were inimical to the granting of any representation, but the total number of answers received was so small that no true opinion of the real feeling of the whole body of Fellows can be based on the voting of a small minority. We do not propose on this occasion to recapitulate the arguments in favour of granting to the Members some share at least in the government of the College; these arguments have often appeared in the pages of THE LANCET and must be fresh in the minds of many of our readers, but we would urge that in the decision of this question the voice of the whole body of Fellows should be heard. The other subject on which the Fellows should assist the Council in coming to a decision is the question of the connexion of Members of the College with medical aid associations. Again and again at the annual meeting the Members have called upon the Council to put forth a pronouncement that it considers the holding of an appointment under a medical aid association as a sufficient cause for the recall of the diploma and thus to follow in the footsteps of other colleges. On this point also the ideas of the Fellows should be of the greatest value and they should feel that they are called upon by their position to give to the Council the benefit of their opinion.

Unless the Fellows by one means or another indicate what they think and feel on these important points it is not possible for the Council to decide on them in a manner consonant with the ideas of the body of Fellows as a whole.

The three members of the Council who this year retire by rotation are Mr. N. C. Macnamara, Mr. A. W. Mayo Robson, and Mr. W. Watson Cheyne. Mr. Macnamara does not intend to offer himself for re-election, but Mr. Mayo Robson and Mr. Watson Cheyne will again be candidates. Mr. Mayo Robson is one of the most widely-known of provincial surgeons and no better representative of the provincial Fellows could be found. Mr. Watson Cheyne is recognised as one of the most able exponents of antiseptic as opposed to aseptic surgery. Both of these gentlemen have done good work for the College during the time they have been on the Council, and the Fellows cannot do better than re-elect them as will probably be the case. There are six other candidates: Mr. H. H. Clutton of St. Thomas's Hospital, Mr. Jordan Lloyd of Birmingham, Mr. Clement Lucas of Guy's Hospital, Mr. J. H. Morgan of Charing Cross Hospital, Mr. C. Mansell Moullin of the London Hospital, and Mr. Bland-Sutton of Middlesex Hospital. The only one of these who is a provincial candidate is Mr. Jordan Lloyd of Birmingham, and as this important medical school is unrepresented on the Council there is much to be said in favour of Mr. Jordan Lloyd's claims, but there are already five provincial representatives on the Council and it will probably not be thought desirable that provincial Fellows should be represented by more than five members out of the 24. St. Thomas's Hospital has at present only one representative, and as it is a large and important school it would not be unreasonable that Mr. Clutton should be elected. He is widely known as an able surgeon and an energetic administrator. Mr. Bland-Sutton comes from Middlesex Hospital, which has already two representatives, and therefore, considering the size of the school, it would be certainly unreasonable at present to increase its representation. Guy's Hospital, with its two representatives, may perhaps claim to have a third, and no fitter surgeon could be chosen than Mr. Clement Lucas, but it seems undesirable to increase the number of Fellows from any one school while other hospitals are unrepresented. Mr. Morgan comes from Charing Cross Hospital, which for some years has not been represented on the Council, and this

is in itself a strong argument in his favour. His appointment would be a distinct gain to the Council. Mr. Mansell Moullin's election would give another representative to the London Hospital, but this would hardly be unfair, as the school is large.

We hope we have said sufficient to induce the large majority of the Fellows to exercise their power of voting at the approaching election, for we believe that the wider the interest they take in the affairs of the College the better will it be for the College itself and for the whole medical profession.

REPORT OF THE MEDICAL OFFICER OF THE LOCAL GOVERNMENT BOARD FOR 1899-1900.

I.

MR. W. H. POWER in his report to the President of the Local Government Board devotes a paragraph to the plague and calls attention to two papers by Dr. R. Bruce Low which are printed amongst the appendices. Dr. Bruce Low has devoted special attention to the course of the spread of the disease, and the full results of his researches will be published at some future time in a separate form. Of the appendices relating to the plague which are published in the present volume, the first (Appendix A., No. 14) is a "summary of the progress and diffusion of plague during 1899," while the second is a memorandum on the precautionary measures which were taken in 1899 to prevent the importation of bubonic plague into England and Wales and on certain cases reported as plague or suspected plague.

During the year 1898 the parts of the world which suffered most from plague were China, India, Japan, some parts of Asiatic Russia, Arabia, East Africa, and Madagascar. During the same year three deaths from plague took place in Vienna, but these cases derived the infection from the bacteriological laboratory and there was no further spread of the disease in Austria. During the year 1899 the area of infection was largely increased, places in Europe, Asia, Africa, America, and Australia all coming within its sphere of influence.

China suffered greatly, but statistics as to the numbers affected and as to the number of deaths are not accurate, for Chinese methods of reporting and registration are most unsatisfactory—a fact which will cause little surprise. Hong-Kong has not been free from the plague since the year 1894, but the mortality has varied within very wide limits. The number of deaths reported have been as follows: in 1894, 2550; in 1895, 36; in 1896, 1078; in 1897, 18; in 1898, 1175; and in 1899, 1415. Japan did not suffer from any great outbreaks and the cases were apparently imported from China—most of them from Hong-Kong. The inhabitants of Formosa suffered considerably, the Japanese official statement showing that there were no less than 2633 cases and 1974 deaths. An outbreak also occurred in the Philippine Islands, and over 60 cases are said to have occurred in the Sandwich Islands. Numea in New Caledonia was affected towards the end of the year, the first sufferers being Kanakas and Tonkinese labourers. The disease afterwards (in 1900) spread to the nickel mines of Nepoui which are worked by convict labour. It was towards the end of the year 1899 that sporadic cases were first diagnosed at Adelaide, South Australia, and at Sydney in New South Wales, and about the beginning of the year 1900 cases were recognised at Melbourne in Victoria and at Brisbane, Rockhampton, Townsville, Cairns, and Ipswich in Queensland. A few cases also occurred in Western Australia and a single one was reported from New Zealand. At the Straits Settlements the disease occurred as early as May, 1899. At Penang no Europeans were affected, a few of the sufferers were Malays, but most of them were Chinese. It is thought that the infection was brought from South China and it is known that a large number of coolies arrived thence shortly before the outbreak. The number of deaths recorded was 37. At Singapore there was no epidemic, but a few cases were landed from ships.

A severe epidemic visited India. The plague was first recognised in the city of Bombay in the year 1896 and from that date the place has never been free from it. During the summer fewer cases have occurred. The mortality has been highest during the month of March and lowest during the months of June and July. The following table gives the number of cases and of deaths reported and the case-mortality per cent. for the years 1896 to 1899:—

Year.	Plague cases.	Plague deaths.	Case-mortality per cent.
1896	2,530	1,801	71·1
1897	11,963	10,232	85·7
1898	19,863	18,160	91·2
1899	19,484	15,830	81·3
Total	53,840	46,023	85·4

The Presidency of Bombay has suffered severely and the number of those affected has increased year by year since 1896. This will be readily seen in the subjoined table which may be profitably compared with the corresponding one given above for the city of Bombay. The table shows the number of reported cases and of deaths and the case-mortality in the Presidency of Bombay (not including the city of Bombay) for the years 1896 to 1899, both inclusive.

Year.	Plague cases.	Plague deaths.	Case-mortality per cent.
1896	367	273	74·3
1897	49,125	36,707	74·7
1898	90,506	68,061	75·2
1899	131,794	101,485	77·0
Totals ...	271,792	206,526	75·8

The districts which suffered most severely were Belgaum, Dharwar, Karachi, Kholapur, Poona, Satara, Surat, Thana, Nasik, and Bijapur. In the city of Poona there were no less than 5316 deaths in five weeks and during the epidemic the total mortality from the disease was over 10,000. In Karachi there were over 2000 deaths. In the city and suburbs of Calcutta there were over 3000 cases and 2745 deaths in the year 1899, whereas during the previous year the number of the recorded deaths from the disease amounted to no more than 192. In the Presidency of Bengal during the year 1898 only 16 deaths from plague were officially reported from the district not contained in the city of Calcutta, and during the year 1899 outbreaks were reported from Howrah, from Saran, and from a few other places, the number of cases being 652 and the number of deaths 505. Towards the end of the year there was a severe outbreak at Patna, and during the first half of the year 1900 over 17,000 deaths were reported from that district alone. In the Central Provinces the number of reported deaths during the year 1898 was 129, and with the exception of four, all these cases occurred in the Wardha district. In the year 1899 only 65 fatal cases were reported from Wardha, but the Nagpur district was much more affected, the number of deaths being 460, of which 202 were reported from the city of Nagpur. According to the accounts received the Native States of Central India suffered but little. The Madras Presidency was affected during the early part of the year 1899, the disease being most prevalent in those districts which border on the States of Hyderabad and Mysore, in both of which plague was at the time epidemic. In the city of Madras itself 11 cases and four deaths were reported during the year, but the total number which occurred in the Presidency amounted to no less than 2480 cases, of which 1855 ended fatally. In the State of Hyderabad during the year 1899 there were 5271 cases and 4242 deaths, and of the latter above 2000 occurred during the month of October alone. In the State of Mysore the districts chiefly affected were the city and district of Bangalore, the city and district of Mysore, and the Kholar goldfields. Plague was epidemic in the State during the year and the number of deaths which had occurred up to the end of the year 1899 amounted to 15,597. The disease reappeared in the winter of 1899-1900. Assam hasescaped lightly: four fatal cases only were reported in the year 1899 and there has been apparently no spread of

the disease. From Burma a single imported case was reported from Rangoon and for Baluchistan three fatal cases only have been notified; there has been no epidemic in either country.

In Persia plague appeared in May, 1899. 40 cases were reported, but in August the outbreak was over. In Mesopotamia four or five cases were recognised.

In Arabia several districts were infected during the year 1899. A case of plague from Karachi is said to have set up an epidemic at Muscat, where 600 deaths occurred. During March and April there were 230 fatal cases at Mattrah. Early in 1900 there was an epidemic at Aden which caused 575 deaths. From Aden the disease was carried by refugees to Berbera in British Somaliland, on the east coast of Africa. Only two fatal cases occurred, the refugees being kept under observation at the Berbera sanitary station. The name of the sanitary officer at Berbera, which is not given in the report, deserves to be put on record. It is probable that his prompt action was the means of saving the colony from a great catastrophe. Assyr in Arabia is a district through which pilgrims to Mecca constantly pass. It was infected with plague in 1899, as it was in many previous years, and the disease must be regarded as being endemic there. Dr. Bruce Low points out that the place is consequently a constant source of danger to the outside world. Djeddah, the chief port of Hedjaz, suffered from plague during the years 1896-97-98, and again during 1899, when its origin was traced to pilgrims. Records as to the number of fatal cases are not to be relied on, and according to the sanitary inspector of the district the numbers given were much understated. It seems, also, that early cases of the plague were called influenza. The Turkish authorities have not published official accounts of the outbreak and details are entirely wanting.

In Africa many places have been affected—Egypt, British and German East Africa, Lorenço Marques, the Transvaal (one imported case which proved fatal), Mozambique, and Grand Bassam (a French possession in East Africa). In May, 1899, it was officially recognised that plague was present in Alexandria, and during the year 93 cases were certified, the number of deaths being 45. Of the cases 65 occurred in natives, 25 in Greeks, two in Frenchmen, and one Italian only was affected. The origin of the outbreak could not be traced. In May, 1900, the disease reappeared. The first cases were traced to people engaged in rag-picking.

In the Portuguese colony of Lorenço Marques plague is supposed to have occurred first in a Parsee whose death was certified as having been due to "galloping consumption." The infection is supposed to have been imported from Madagascar. The Portuguese authorities were not desirous to spread exact knowledge as to the occurrence and incidence of the disease; the Governor-General assured the foreign Consuls that there was no plague in the district, and the medical men were forbidden to certify that patients had the plague.

Madagascar suffered from outbreaks of the disease in the years 1898 and 1899; no details of the epidemic are available, but it is said that only one European has been affected.

At the Island of Réunion cases of *lymphangite infectieuse* were reported in April, 1899, and a question arose as to the exact nature of the disease. Dr. Thiroux, a colonial medical officer, obtained the opinion of Dr. Roux of the Pasteur Institute, who succeeded in finding the true plague bacillus. From this fact Dr. Thiroux concluded that *lymphangite infectieuse* and plague are identical. On this matter Dr. Bruce Low pronounces no opinion.

It has been already mentioned that plague has been called "galloping consumption," and it may be convenient here to give other names by which the disease has been lately called in various parts of the world. It seems probable that in Mauritius it has been diagnosed as "malarial fever." In Lisbon it was at first called "the Indian typhoid." In Paraguay it was named "malarial fever" and "typhus." In Brazil it was called variously "pernicious lymphangitis," "adenitis lymphatica," and "yellow fever with buboes," and at Rio Grande do Sul it had amongst other names that of "virulent influenza." Cases of plague appear also to have been diagnosed as "beri-beri."

A brief reference must be made to the course of the plague as it affected America. Few cases appeared in the northern part of the continent. A single case was imported to New York and several were landed at Port Townsend. In neither of these instances was there any general spread of the disease. At San Francisco a few cases occurred in the Chinese quarter in March, 1900, and some deaths ascribed to pneumonia which occurred in Montana were possibly cases of plague. From Mexico accounts of a mutually contradictory nature have been received. There seems little doubt that cases occurred at Buenos Ayres, and that the infection was derived from Oporto. Cases occured at Rosario in the Argentine Republic in January, 1900, but the source of infection is not known. From Rosario the plague was conveyed to Cape Town by means of a forage transport. Buenos Ayres was also affected in December, 1899, and January, 1900, but its existence there was at first denied by the authorities. In Brazil a few cases occurred in Santos in October, 1899, and at San Paulo later in the year. Rio de Janeiro was affected later and 130 deaths from the disease were reported.

In Europe the country chiefly affected in 1899 was Portugal and full accounts of the outbreak in Oporto have been already published, but it has yet to be found by what means the plague reached the country, and although various surmises have been formed they do not appear to have been founded on any positive evidence. The Local Government Board received from the Foreign Office on August 15th, 1899, copies of telegrams notifying the outbreak in Oporto. On the day following the Medical Department of the Local Government Board obtained the sanction of the Board to conduct a port sanitary survey. Three members of the staff, Dr. Thompson, Dr. S. M. Copeman, and Dr. R. J. Reece, were instructed to visit some of the ports at once. Soon afterwards Dr. G. S. Buchanan and Dr. D. Mair were appointed to the survey staff, and Dr. F. St. G. Mivart and Dr. Johnson were instructed to hold themselves in readiness to render additional assistance in case of need. Information was at once sought of the Board of Customs as to which of the English and Welsh ports were most frequently in communication with Portugal and it was found that 16 ports had communications with Oporto and five more with other Portuguese ports. It was thought, considering the possibility of the extension of plague to Spain, that ports trading with all parts of the Peninsula ought to be examined. This added 18 to the number to be inspected and brought up the total number of port and riparian authorities concerned to 39. To all these authorities general and particular advice was given by the inspectors. Attention was called to the necessity for inspecting the shipping and for examining medically those who arrived from infected ports. Further, the necessity for isolation accommodation and for means of disinfection was insisted upon, and the method of disposal of the bodies of patients who might die from plague was discussed. Conferences were held as to the destruction of rats. In some cases the Board on the advice of their inspectors wrote to the port authorities calling their attention to certain sanitary improvements which ought to be made without delay, and as a result prompt action was taken in many cases. A circular letter was sent on August 16th to the port sanitary authorities informing them that there was an epidemic of plague at Oporto and directing special attention to all vessels arriving from that port.

During the course of the survey made by the medical inspectors some of the Customs officers did not genially coöperate with the port authorities, and it was found necessary to communicate with the Board of Customs, who sent a circular to their officers expressing surprise at the past action of some of their number and a clear expression of the certainty which the Board entertained that no trouble arisising from that cause would occur again. The next little difficulty which arose was as to the interpretation of one of the Local Government Board's own Orders (the Order of Nov. 9th, 1896). The questions were: What was an infected port? What was a suspected vessel? What was to be done in case of sick persons who were sent over as British consular passengers but who had no medical certificate? In regard to the latter question the Board of Trade had to be consulted and it was settled that in future medical certificates should be sent in all cases. Another matter which it was found necessary to decide was the meaning to be attached to the word "voyage." It was evident that a ship arriving from a foreign port might in the ordinary course of trade land part of her cargo at one English port and then pass on to another port. A conference was held with the representatives of the Customs, and it was settled that in such a case a vessel at the second or third port of destination should still be held as coming "from foreign," and that the Customs officers

should thereupon inform the port medical officer of the arrival of such a ship. The port medical officer on his part was to keep the Customs authorities informed as to what countries were regarded as infected.

Measures were also taken with a view to supply M. Haffkine's prophylactic. With this view consultations were held with officials of the India Office and arrangements were made that a supply of the protective fluid should be sent from India. M. Haffkine happened to be at the time in England, and the medical officers of the Local Government Board received full information from him as to the details of his method of inoculation. A brief description of the prominent symptoms of the plague was drawn up for the use of the captains of those ships which do not carry surgeons on board, and this leaflet is now incorporated in the official log-book. In order to provide for the immediate recognition of any cases of plague which might by chance escape the vigilance of the port sanitary authority, or might occur after the landing of sailors, an officer of the Board inspected the seamen's boarding- and lodging-houses which are situated near the London docks and conferred with the authorities of the chief London hospitals and with the medical officer of the London County Council, and also with the Metropolitan Asylums Board. The Foreign Office were advised by the Local Government Board that it would be well if arrangements were made by which the British representative on the Egyptian Sanitary Board could supply information to the Board as to what diagnoses were arrived at in the case of persons at Moses' Well who were suspected of being infected with the plague. Moses' Well, it may be said, is the Egyptian sanitary station at the head of the Red Sea. In consequence of the absence of any proper official means of communication unnecessary trouble was caused; in one case, for example, the Board only heard indirectly and after a long interval that some patients who had been diagnosed as suffering from plague had not had the disease at all.

It will be readily seen that the measures taken by the Medical Department of the Local Government Board for the prevention of plague in this country were quickly and thoroughly carried out. The arrangements made in conjunction with the Board of Trade and the Customs will also be of use in ensuring the smooth working of any measures which may in future be rendered necessary by any threatened invasion of epidemic disease. It is a matter for congratulation that during the year 1899 no case of plague occurred in this country, and the fact that a considerable number of persons were detained as "suspects" by the port medical officers, as Mr. Power says, "is evidence of the strict scrutiny which they exercised over the arrival of people coming from infected places."

THE CORONERS' SOCIETY OF ENGLAND AND WALES.

THE annual banquet of the Coroners' Society of England and Wales was held at the Holborn Restaurant, London, W.C., on June 6th, the President, Mr. Sidney Hacker, coroner for Devonshire, being in the chair. At the conclusion of the banquet, after the loyal toasts had been duly honoured, "The Coroners' Society" was proposed by Mr. Thomas Wakley, jun., who pointed out that the society was founded in 1846, and that during the first year there were 56 members, whereas the number at the present time was 270—practically a five-fold increase during the 55 years of its existence. The society was first formed simply with a view to safeguard the interests of coroners. This, though a very useful and worthy object, was limited to a class, but what was intended at first to be merely for the benefit of a few had come to be of value to the whole community. Amongst other things the work of the society had resulted in much greater uniformity in the carrying out of their duties by coroners in England and Wales and this necessarily meant a great gain to the community. The first president of the society was Mr. (later Sir) John Humphreys who continued in office for many years. He was succeeded by Mr. S. F. Langham who filled the combined position of president and treasurer. On his retirement from these offices a biennial presidentship was established which continued to the present time. It was pleasing to think that Mr. Langham, on retiring from the coronership of the City of London, the duties of which he had ably discharged for very many years, had been granted by the corporation a pension of £600 per annum, this being the first time a pension had been given. The Coroners' Society, through its council and by the action of individual members, had practically initiated the erection of proper mortuaries, chambers for post-mortem examinations, and coroners' courts, and by means of representations founded on riders to verdicts by juries had brought the necessity for such to the notice of local vestries and parish councils. The society was recognised by the departments of State as a representative body able to afford trustworthy assistance in such matters as statistics, prevention of deaths and accidents, &c. In 1893, in consequence of representations made by the society to the Home Office, the Secretary of State gave directions that any person who was accused of having caused the death of another person should, if he so desired, appear before the coroner, hear the evidence of witnesses, and give evidence himself. Many had availed themselves of this opportunity and in some instances had cleared themselves of the charges brought against them. Practically the society was the pioneer of the subsequent Criminal Evidence Act of 1898. The society, moreover, had been largely instrumental in getting carbolic acid placed on the schedule of poisons, and it had assisted towards the provision of regulations for the greater care of infants, the protection of children from fire by the use of fire-guards, the improvement of dwellings, sanitary and otherwise, the use of safer lamps for paraffin oil, the erection of bridges at level crossings, the inspection of workhouses and laundries, and other important matters. The society, the speaker said, was, he understood, now engaged with a view to lessen the number of uncertified deaths, and also with regard to the registration of still-births, undertakings in which everyone must wish it success. There had just come to light at Birmingham another gruesome object-lesson of the need for further legislation. There could be no doubt that by the more efficient, diligent, and complete investigations made by coroners into the causes of death much had been done to safeguard and to preserve human life, and this excellent result was doubtless very largely due to the influence of the society and the example set by its members. In conclusion, Mr. Wakley said that he felt that the honour of proposing the toast had been bestowed upon him because he happened to be a descendant of one who, if he might say so without impropriety, was in his time a respected and somewhat noteworthy coroner—one whose influence as coroner both on the ancient and honourable office itself and on the welfare of the people had been, he ventured to think, wholly for good.—Mr. Sidney Hacker, the President, replied.—The other toasts were "The Imperial Forces," proposed by Mr. Henry White, coroner for Winchester, and responded to by Captain H. Kendall and Surgeon-Lieutenant-Colonel Danford Thomas, M.D., coroner for London and Middlesex; "Our Guests," proposed by Mr. H. J. Robinson, coroner for Lancashire, President-elect of the society, and responded to by Sir Franklyn Lushington, chief police magistrate for London, who contrasted the office of coroner, founded certainly not later than the time of King Alfred the Great, with that of the civic magistrate which came into existence in the early part of the reign of Queen Victoria, and Mr. A. O. Mackellar, chief surgeon to the metropolitan police, who referred feelingly to the sad death of his colleague, Mr. Thomas Bond, which had occurred that morning; and "The Officers of the Society," proposed by Mr. J. C. Malcolm, coroner for Leeds, and replied to by Mr. A. Braxton Hicks, coroner for London and Surrey, the secretary of the society. A vote of thanks was given to Mr. Walter Schröder, deputy coroner for London and Middlesex, who had made all the arrangements for the dinner, and was briefly acknowledged by him. In the course of the proceedings a loving-cup was presented by the retiring President, Mr. Hacker, to the society in token of his period of office, and we may add that a coroner's robe was presented to Mr. Hacker.

NEW OPERATING THEATRE AT CARDIFF INFIRMARY.

A NEW operating theatre in connexion with the Cardiff Infirmary was formally opened on June 6th by Mr. Edmund Owen, F.R.C.S. Eng., senior surgeon to St. Mary's Hospital.

Although it had been felt for some years that a new theatre was an absolute necessity the management committee of the infirmary, having an ever-increasing revenue debt

before them, very properly refused to burden the institution still further upon its capital account. Early in the year 1899 Mr. Thomas Webb of Tunbridge Wells, a director of the Ocean Colliery Company of Cardiff, came to the relief of the committee with the offer of a donation of £1000 towards the erection and equipment of a new theatre in memory of his wife, and the architect to the infirmary, Mr. Edwin Seward, F.R.I.B.A., of Cardiff, prepared plans for the building. Upon their completion it was found that if the new theatre was to satisfy the requirements of the present day the cost would be at least £1500, and upon this fact coming to the knowledge of Mr. Webb he very generously increased his contribution to that sum.

The alterations and additions to the building give to the infirmary two operating theatres, a room for the surgical staff, two ante-rooms for the administration of anæsthetics, and a students' room, all on the ground floor and within 30 feet of the casualty entrance to the institution and only about 10 feet from the lift. In the old theatre and in the students' room the floors have been reconstructed and covered with terrazzo, the walls have been painted, electric lights have been installed, and a sink has been fixed in the theatre provided with fittings similar to those in the new theatre described below. The full size of the new theatre is 18 feet by 25 feet, but this area is reduced to 18 feet square by the three-tier students' gallery, which is divided from the floor of the theatre by a single iron rail and is approached from the students' room by a separate passage. The height of the building from the floor to the inside of the roof ridge is 23 feet. The whole slope of the roof upon the north side is glazed along its entire length with fixed glass; the underside of the slates upon the other slope is finished with Keen's cement painted white. Three metal-framed casement windows are placed in the north wall of the theatre. Each of the ante-rooms is divided from the adjoining theatre by sliding doors running upon an iron carrier above and in a groove at the floor level. The floors are laid with terrazzo and in the theatres there is a slight fall towards a currented channel in the terrazzo which in turn discharges into the open air upon a channel leading to a trapped gully. The walls are lined to a height of seven feet from the floor with light green glazed bricks; above this dado in the new theatre there are white glazed bricks to the ceiling slope, and elsewhere the walls are covered with Keen's cement finished with hard white paint. All corners are rounded and ledges are generally avoided; there are no architraves to windows or doorways. In the gable wall of the new building is placed a Blackman's extraction fan about 12 inches in diameter operated by an electro-motor and capable of rapidly changing the whole of the air in the theatre. Inlet ventilators with hit-and-miss internal gratings and with an area of 18 inches by nine inches are fixed a few inches above the floor-level in all the rooms. In front of the principal of these openings there are hot-water radiators so constructed that they will swing at right angles to the wall, and as each radiator has a distinct connexion with the hot-water pipes the temperature of the building can be regulated at will. Artificial lighting is provided with incandescent electric lights, the central light over the operating table being a combination of 16 16-candle power lamps. In each theatre and in the staff room there is a white glazed sink; the water fittings of white metal enable hot, cold, or tepid water to be drawn off or sprayed from distinct taps. There are no pedal fittings, but over the handles of the taps, which are fixed at right angles to the water-pipes, there are placed loose white metal coverings which can be removed and sterilised each time they are used. In the dividing wall of the two theatres and opening into either is an autoclave made by Sulzer of Winterthur for the sterilisation of instruments or dressings. An instrument case with glass doors and glass shelves is to be placed in one of the ante-rooms.

A great deal of painstaking care appears to have been bestowed in matters of detail upon the construction of the building and the staff are to be congratulated upon having the coöperation of an architect who has realised the necessity for providing a building which shall be entirely hostile to the propagation of micro-organisms. The sterilised loose covering for the water taps is a novelty and will probably be found an improvement upon the pedal fittings. It will be a great comfort to the operating surgeon to know that his instruments and dressings have been subjected to the thoroughly effectual sterilisation of Sulzer's autoclave. There appears to be only one detail capable of improvement and that relates to the sliding doors between the ante-rooms and the theatres; the grooves in which these doors run will undoubtedly be the receptacle for dust and dirt and will be extremely difficult to keep clean.

DINNER TO SURGEON-GENERAL JAMESON, C.B.

AT a meeting recently held it was determined to invite Surgeon-General Jameson, C.B., to a complimentary dinner offered to him by his professional brethren. Surgeon-General Jameson has acted as Director-General of the Army Medical Department for the past five years and has had to discharge during that period duties involving the greatest responsibility, especially in connexion with the medical requirements of the war in South Africa.

Sir William Church has consented to take the chair and the dinner will probably take place in the latter part of July. An executive committee has been appointed to make the necessary arrangements, and communications will be received by the honorary secretary, Mr. Cuthbert Wallace, F.R.C.S. Eng., 75, Lambeth Palace-road, S.E.

The proposal has been cordially accepted by the President of the Royal College of Physicians of London (Sir William S. Church, Bart.), the President of the Royal College of Surgeons of England (Sir William Mac Cormac, Bart., K.C.B.), the President of the Royal College of Physicians of Edinburgh (Dr. Fraser), the President of the Royal College of Surgeons of Edinburgh (Dr. Dunsmure), the President of the Royal College of Physicians of Ireland (Sir Christopher Nixon), the President of the Royal College of Surgeons in Ireland (Mr. Thomas Myles), the President of the Faculty of Physicians and Surgeons in Glasgow (Dr. Finlayson), the President of the General Medical Council (Sir William Turner, K.C.B.), the Rt. Hon. Lord Lister, F.R.S., Sir Thomas Barlow, Bart., K.C.V.O., Sir Douglas Powell, Bart., K.C.V.O., Sir Thomas Smith, Bart., Sir Joseph Fayrer, Bart., K.C.S.I., Sir Frederick Treves, K.C.V.O., C.B., Sir John Batty Tuke, M.P., Sir Hector Cameron, Sir Dyce Duckworth, Sir William Thomson, C.B., Dr. F. W. Pavy, F.R.S., Dr. Patrick Heron Watson, Mr. Willett, Professor McCall Anderson, Mr. J. Langton, Mr. H. T. Butlin, Mr. Howard Marsh, Mr. A. A. Bowlby, C.M.G., Professor John Chiene, C.B., Mr. C. Stonham, Mr. W. Watson Cheyne, C.B., F.R.S., Mr. G. H. Makins, C.B., Mr. John Morgan, Dr. Allchin, Dr. Anderson, Dr. Bowles, Dr. Shore, Mr. Alfred Cooper, Dr. Farquharson, M.P., Dr. Philip Frank, Mr. Reginald Harrison, and Professor D. J. Cunningham, F.R.S.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6965 births and 3336 deaths were registered during the week ending June 8th The annual rate of mortality in these towns, which had been 16·8, 16·7, and 16·3 per 1000 in the three preceding weeks, further declined last week to 15·2. In London the death-rate was 14·2 per 1000, while it averaged 15·8 in the 32 large provincial towns. The lowest death-rates in these towns were 7·9 in Derby, 12·2 in Brighton and in Bristol, 12·6 in Cardiff, and 12·7 in Blackburn; the highest rates were 18·8 in Halifax, 19·1 in Norwich, 19·4 in Oldham, 19·7 in Nottingham, and 21·2 in Gateshead. The 3336 deaths in these towns included 320 which were referred to the principal zymotic diseases, against 386 and 360 in the two preceding weeks; of these 320 deaths, 91 resulted from measles, 75 from whooping-cough, 57 from diarrhœal diseases, 49 from diphtheria, 32 from scarlet fever, and 16 from "fever" (principally enteric). No death from any of these diseases was registered last week either in Leicester, Preston, or Huddersfield; in the other towns they caused the lowest death-rates in Croydon, Brighton, and Derby, and the highest rates in Swansea, Bolton, Blackburn, Sunderland, and Gateshead. The greatest mortality from measles occurred in Nottingham and Bolton; from whooping-cough

in Swansea, Wolverhampton, and Sunderland; and from diarrhœal diseases in Plymouth and Burnley. The mortality from scarlet fever and that from "fever" showed no marked excess in any of the large towns. The 49 deaths from diphtheria included 15 in London, eight in Liverpool, five in Sheffield, three in Blackburn, and three in Leeds. No fatal case of small-pox was registered last week in any of the 33 large towns; and only one small-pox patient was admitted during the week into the Metropolitan Asylums Hospitals and remained under treatment on Saturday, June 8th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 2462, against numbers increasing from 1522 to 2352 on the six preceding Saturdays; 314 new cases were admitted during the week, against 323, 341, and 318 in the three preceding weeks. The deaths in London referred to diseases of the respiratory organs, which had been 249, 191, and 240 in the three preceding weeks, declined again last week to 187, and were 61 below the corrected average. The causes of 27, or 0·8 per cent., of the deaths in the 33 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Leicester, Salford, Hull, Newcastle, and 12 other smaller towns; the largest proportions of uncertified deaths were registered in Manchester, Bradford, Sunderland, and Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 20·7 and 20·1 per 1000 in the two preceding weeks, further declined again to 19·6 during the week ending June 8th, but showed an excess of 4·4 per 1000 over the mean rate during the same period in the 33 large English towns. Among these Scotch towns the death-rates ranged from 13·7 in Paisley and 13·8 in Aberdeen to 20·1 in Leith and 20·4 in Glasgow. The 625 deaths in these towns included 48 which were referred to whooping-cough, 21 to measles, 18 to diarrhœa, seven to diphtheria, six to "fever," one to small-pox, and one to scarlet fever. In all, 102 deaths resulted from these principal zymotic diseases last week, against 89, 94, and 97 in the three preceding weeks. These 102 deaths were equal to an annual rate of 3·2 per 1000, being 1·7 per 1000 above the zymotic death-rate during the same period in the 33 large English towns. The fatal cases of whooping-cough, which had been 40 and 47 in the two preceding weeks, further increased last week to 48, of which 25 occurred in Glasgow, 11 in Edinburgh, six in Dundee, and four in Leith. The deaths from measles, which had been 19 and 17 in the two preceding weeks, rose again to 21 last week, and included 13 in Glasgow, three in Edinburgh, and two in Greenock. The fatal cases of measles, which had been 30 and 24 in the two preceding weeks, further declined last week to 18, of which 11 were registered in Glasgow, three in Dundee, and two in Edinburgh. The deaths from diphtheria, which had been two and four in the two preceding weeks, further rose last week to seven, and included four in Glasgow and two in Greenock. The six fatal cases of "fever" exceeded the number recorded in any recent week, and included four in Glasgow, where the death from small-pox was also registered. The deaths referred to diseases of the respiratory organs in these towns, which had been 101 and 107 in the two preceding weeks, declined again last week to 98, and were slightly below the number in the corresponding period of last year. The causes of 23, or nearly 4 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which, in the three preceding weeks, had been 25·4, 24·4, and 21·3 per 1000 of the population, as estimated from the results of the recent census, further declined to 20·1 during the week ending June 8th. During the past four weeks the death-rate in the city has averaged 22·8 per 1000, the rates during the same period being 15·3 in London and 20·9 in Edinburgh. The 144 deaths of persons belonging to Dublin were nine below the number in the preceding week, and included nine which were referred to the principal zymotic diseases, against 10, nine, and five in the three preceding weeks; of these five resulted from whooping-cough, two from diarrhœa, and one from scarlet fever. These nine deaths were equal to an annual rate of 1·3 per 1000, the zymotic death-rate during the same period being 1·5 in London and 2·8 in Edinburgh. The fatal cases of whooping-cough, which had been eight, five, and two in the three preceding weeks, rose again last week to five. The 144 deaths in Dublin last week included 21 of children under one year of age and 32 of persons aged upwards of 60 years; the deaths both of infants and of elderly persons showed a decline from the numbers in the preceding week. Six inquest cases and two deaths from violence were registered, and 60, or nearly one-half, of the deaths occurred in public institutions. The causes of six, or more than 4 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ARMY MEDICAL SERVICE.

SURGEON-GENERAL A. F. PRESTON, Principal Medical Officer in Ireland, has arrived in London, having as Senior Surgeon-General at home to take temporary charge until the appointment of a new Director-General.

ROYAL ARMY MEDICAL CORPS.

Captain C. Dalton takes over command of C Company at Aldershot. Surgeon-Captain R. S. Smith, A.M. Reserve, assumes medical charge of troops, field hospital, &c., at Barry Camp. Brigade-Surgeon-Lieutenant-Colonel Wilson, Vol. M.S.C., assumes medical charge of the troops, &c., at Irvine Camp.

VOLUNTEER CORPS.

Artillery: 1st Shropshire and Staffordshire: Surgeon-Major E. Cureton to be Surgeon-Lieutenant-Colonel. *Rifle:* 1st (Exeter and South Devon) Volunteer Battalion the Devonshire Regiment: Surgeon-Lieutenant R. Pickard to be Surgeon-Captain. 2nd Volunteer Battalion the Sherwood Foresters (Derbyshire Regiment): Surgeon-Major A. Chawner to be Surgeon-Lieutenant-Colonel. 1st Sutherland (the Sutherland Highland): Surgeon-Lieutenant J. K. Tomory to be Surgeon-Captain and to remain Supernumerary. 2nd Volunteer Battalion the Gordon Highlanders: Hugh Gordon Cowie to be Surgeon-Lieutenant.

VOLUNTEER MEDICAL STAFF CORPS.

The Edinburgh Company: Surgeon-Captain D. Hepburn to be Surgeon-Major. The Glasgow Companies: George Henry Edington to be Surgeon-Lieutenant; Matthew Dunning to be Surgeon-Lieutenant.

SOUTH AFRICAN WAR NOTES.

The following have been discharged from hospital to duty:—Major C. W. Allport, R.A.M.C., and Civil Surgeons Charles Seymour Langley, Frederick Charles James, John Harry Saunders, Leonard Bostock, and Edward Albert Nathan.

No change is reported in Lieutenant Bean of the New South Wales Medical Staff.

Civil Surgeon Wilbond is reported improving.

Civil Surgeon Donald Graham is reported dangerously ill with enteric fever (Rietfontein West, June 10th).

Colonel Baker, R.A.M.C., and Civil Surgeons T. H. Gardner, E. Archer-Brown Cotterell, Robinson, Johnson, Bruce Hodge, and Hott are on passage home.

Major H. J. Wyatt, R.A.M.C., and Major A. Wright, R.A.M.C., have arrived in England from South Africa.

THE FRENCH MEDICAL SERVICE DURING THE RECENT OPERATIONS IN CHINA.

IN a supplementary report, which is published in the *Archives de Médecine Navale* for April, Dr. Mercié, principal medical officer in Chinese waters, gives an able and outspoken account, from a medical point of view, of the events which took place in the north-east of China during June, July, and August, 1900. Commencing with Admiral Seymour's relief expedition, which he characterises as "a brilliant feat of arms" and in which France was represented by 163 sailors under Captain de Marolles, with Dr. Autric in medical charge, Dr. Mercié proceeds to give a graphic description of the state of unpreparedness in which his department found itself on the outbreak of hostilities. As late as May, and even up to the first days of June, no one believed that the Chinese would fight. The ease with which the Japanese had triumphed over them in 1895 completely masked the situation. The fact that since then the Chinese arsenals had

been filled with modern arms was apparently ignored, and it was the universal opinion amongst all nationalities on the spot that nothing could induce Chinese soldiers to behave with courage and tenacity. But in spite of all this optimism it was not long before wounded and sick men began to arrive in comparatively overwhelming numbers. There were six French men-of-war on the spot, but Dr. Mercié was nevertheless put to his wits' end to find suitable accommodation for the patients. In eloquent terms he describes the shifts he was put to, thus completely bearing out the strictures of Dr. Léo to which we recently referred,[1] but although the executive officers gave him every assistance the utmost he could do was to provide beds for 60 of the worst cases. In addition to these there was also a sick list about 90 strong, and owing to the paucity of medical officers Dr. Mercié was compelled to attend to both categories single-handed. The way the patients had to be distributed in different parts of the *D'Entrecasteaux* made the task of looking after them trebly arduous, more especially as the insufficency of trained medical attendants was equally lamentable. It is true that Captain Jan-Kerguistel, who was in command, was willing to detail orderlies from among the crew, but as Dr. Mercié remarks "it is not the first comer who can fill the rôle of an *infirmier*." Whenever, between dressings, Dr. Mercié wanted to wash his hands he had to walk and to climb at least 100 metres, in this way wasting several hours each day. Altogether the picture represented is that of a capable man struggling against well-nigh insuperable difficulties. But happily, when things were at their worst there was help forthcoming from an unexpected quarter. On July 7th the *Hakusi-Maru*, a Japanese Red Cross hospital ship arrived upon the scene and was placed at the disposal of the sick and wounded of all nationalities. The installation for 200 patients is described by Dr. Mercié as irreproachable in every respect. The staff comprised four medical officers, 33 male and 11 female attendants, all being specially trained and most efficient. "I may add, *en passant*," says Dr. Mercié, "that the hospital ships belonging to other powers, which reached Taku a long time afterwards, were reserved strictly for the sick of their own nationalities, and that the Japanese alone accepted patients without distinction." In conclusion Dr. Mercié draws a moral which might well be taken to heart by the controllers of other navies as well as his own. "It is of the utmost urgency," he says, "that hospital ships should form an inalienable portion of every sea-going squadron. In a naval engagement the improvised accommodation on board the *D'Entrecasteaux* would not have been available. A horrified world would have seen a return to the barbarous practice of a bygone age, when the unfortunate wounded men were heaped up *pêle-mêle* in the dark unwholesome depths of the vessel until merciful death came to relieve them from their sufferings."

THE REPORT ON THE WAR OFFICE.

The report of Mr. Clinton Dawkins's Committee on War Office organisation is an important document and of a sufficiently drastic nature to be welcomed by that body of army reformers who have never seen anything good in our military administration. But how has the present state of things been brought about? Well, it is no doubt partly attributable to our party system of government. As one political party succeeds another changes are introduced, details get added or altered, new regulations are made and superimposed one upon the other until the machine gets more and more clogged, and almost ceases to act as a going business concern. While admitting all this and the shortcomings which the South African war have brought to light it cannot, we think, be denied that there is nevertheless no other nation which could have done what has been done in equipping, transporting, and landing such a force in that country. It says much for the personal capacity of the officials at Pall Mall that they have kept the machinery going so long and managed the affairs of the army as well as they have done. As the committee point out, the general structure of the organisation has been "built up piecemeal" and as the result of constant changes and compromises. The recommendations of the committee mainly deal with business principles and seem to be in the right direction, but we have yet to see how these are to be applied and how they will work out in the concrete and in practical business detail. There is nothing in the report of the committee so directly affecting the army medical service as to lend itself to comment, but we sincerely trust that a place will be found in any scheme for its being duly considered and properly represented.

[1] THE LANCET, May 25th, 1901, p. 1493.

THE PARKES MEMORIAL PRIZE.

Captain H. A. Howell, R.A.M.C., has, as we have already announced, been awarded the Parkes Memorial Prize for an essay on Venereal Diseases in British and Native Armies. This prize, which consists of 75 guineas and a bronze medal, is awarded every third year to the writer of the best essay on a subject connected with hygiene. The competition is open to the medical officers of the army, navy, and Indian services, of executive rank on full pay, with the exception of the assistant professors of the Army Medical School during their term of office. The subject for the next prize will be "On the Prevention of Disease amongst Armies engaged in Active Operations in the Field, with Special Reference to the Sanitary Organisation of a Field Force," to be illustrated as far as practicable from the personal experience of the writer. Essays must be sent in to the secretary of the Parkes Memorial Fund, Royal Victoria Hospital, Netley, on or before Dec. 31st, 1903. Each essay should have a motto and should be accompanied with a sealed envelope bearing the same motto and containing the name of the competitor.

THE ROYAL NAVAL HOSPITAL, PLYMOUTH.

The First Lord of the Admiralty (the Earl of Selborne) and the other Admiralty Lords made an official inspection of the Royal Naval Hospital, Plymouth, on June 4th. Their lordships were received by Sir Henry Norbury, K.C.B., R.N. (Naval Medical Department), Inspector-General J. F. Fisher, Deputy Inspector-General C. C. Godding, and Deputy Inspector-General H. T. Cox. Many improvements are being made in the hospital. To each block of the building improved bath and lavatory accommodation is being added and the old wood floors are being removed and fire-proof concrete substituted. Since the previous official visit the new isolation buildings have been completed, the laundry extended, and new machinery added. A small building adjoining the hospital is to be enlarged and converted into a new block.

THE BESTOWAL OF THE SOUTH AFRICAN MEDALS.

The medical arrangements in connexion with the ceremony of bestowing the South African war medals upon the recipients on June 12th were under the supervision of Captain W. A. Ward, R.A.M.C. Twelve squads of regimental stretcher-bearers were distributed among the troops and two dressing stations were formed, one at the Tylt Guard-room, Horse Guards, to receive cases from the north and east of the ground, and the other at the south-west corner of the parade towards Storey's Gate, where there were ambulance-wagons to receive cases from the south and west of the ground. A station was also formed at the park-keeper's shelter in St. James's-park facing the Horse Guards. Among the recipients of the medals were members of the Royal Army Medical Corps and the consulting surgeons and civilian surgeons who have returned from the seat of war.

THE MILITARY STATION HOSPITAL, PORTSMOUTH, AND THE NEW NAVAL BARRACKS.

On Monday, June 10th, the military hospital at this station was handed over to the contractors for the new naval barracks as the site of the officers' quarters. A site has been secured on Portsdown Hill for the military hospital. The new naval barracks will occupy an area of 62 acres and barrack-room accommodation will be provided for 4000 men.

AMBULANCE CHALLENGE SHIELD COMPETITION.

The Ambulance Challenge Shield of the Volunteer Medical Association has been won by the 2nd V.B. Royal Fusiliers (City of London Regiment). The following are the names of the individual winning competitors: Corporal S. Bethell, Corporal C. Burridge, Private W. G. Tringham, and Lance-Corporal P. J. Watkins.

Captain T. H. M. Clarke, D.S.O., R.A.M.C., has taken up his duties as private medical adviser to H.R.H. Prince George of Greece. Captain Clarke came prominently under notice during the time that he served in Crete.

The King has made the following appointments:—To be an Ordinary Member of the Third Class or Companion of the Most Distinguished Order of St. Michael and St. George: John Binny Hay, M.B., C.M. Edin., of the Gold Coast Medical Service, in recognition of his services in the siege

of Coomassie. To be a Companion of the Distinguished Service Order in recognition of his services during the recent operations in Ashanti: Surgeon-Captain William Fletcher, Militia Medical Staff Corps.

Correspondence.

"Audi alteram partem."

HOSPITAL SUNDAY.

To the Editors of THE LANCET.

SIRS,—The approach of "Hospital Sunday" must be my plea for urging, as president and treasurer of the Fund, that the public should respond in a liberal spirit to the appeal which will be made to them on Sunday next in all the churches and chapels of the metropolis in behalf of the hospitals and dispensaries for the treatment of the sick poor. This year the council have 201 institutions seeking to participate in the Fund. The needs of all these charities, if only to reimburse them for last year's outlay on the London poor, would not be covered by £100,000.

There is, happily, no necessity for me to enlarge upon the merits of these institutions, their readiness in relieving those who are afflicted, the benefits they confer on the more fortunate by checking the spread of disease, and their success in mitigating the exceptionally sad consequences of illness when combined with poverty.

But I desire to point out the unique character of this annual collection and the opportunity which it affords for unostentatious and practical sympathy with a cause which is Christian and self-sacrificing beyond dispute. Every inhabitant of the metropolis, irrespective of creed, is offered the privilege of easily gratifying his instinctive sympathy with the suffering poor; he is not subjected to pressure and of imposture there can be no fear.

Should any of your readers be absent from public worship or not in London next Sunday they may remit their contributions to me at the Mansion House.

I am, Sirs, yours faithfully,
FRANK GREEN, Lord Mayor.

The Mansion House, London, June 11th 1901.

P.S.—I have just received a further generous donation of £10,000 from Mr. George Herring who in his letter says: "I hope your receipts this year will make a record one, as the hospitals and convalescent homes are greatly in need of funds, and it must be true charity to help our poor through sickness to health."

"DENTISTRY AND THE SERVICES."

To the Editors of THE LANCET.

SIRS,—The very temperate and sensible annotation on the above subject in THE LANCET of June 8th has tempted me to point out what appears to be a possible method of dealing with the teeth of our soldiers. The present war has conclusively demonstrated that legislation is necessary. Sending four dentists to South Africa to relieve the sufferings of our soldiers shows that the Government realises its present responsibility, but such a course of action in no sense deals with the question upon a permanent footing. Although it is surrounded with many difficulties it seems possible to avoid pitfalls and to bring into force a system that shall adequately deal with it which not being too expensive a luxury might be within the pale of practical politics. The problem can be dealt with as follows: 1. The appointment of dental surgeons at all the large military depôts who shall be at the service of the troops at home. The question of payment is one that can be arranged. 2. That all army medical men shall upon admittance into the service be required to receive six months' training in operative dentistry at a dental hospital and shall be required to produce evidence of attendence upon such a course. 3. That each army surgeon shall be provided with the necessary equipment to enable him to treat all ordinary dental troubles.

I have purposely avoided entering into minute details which could be carefully thought out and arranged, but it would seem desirable that a permanent Government official should be appointed to see that the scheme is efficiently carried out. I believe the adoption of a course such as is here suggested would permanently deal with a difficult subject.

I am, Sirs, yours faithfully,
June, 1901. MORTON SMALE.

ARMY MEDICAL REORGANISATION.

To the Editors of THE LANCET.

SIRS,—Unless this subject be tabooed I would like to call attention to the important bearing of the last return from the War Office, giving the total losses in the field force in South Africa to the end of May, on the professional status of the *personnel* which the medical staff requires. In this return the total death loss from war injuries is placed at 5592 and that from disease at 9667, while no less than 49,761 were invalided, doubtless mainly from disease and especially enteric fever—a preventable malady, and of these 342 had died and 2864 been discharged the service as unfit, the remainder having recovered and been returned to duty except 819 still in hospital. This return is much on a par with the former ones, both in respect to this and former wars and to the experience of other nations, and illustrates the enormous ravages which disease makes, both as to temporary inefficiency of the field force and also as to permanent loss from deaths or discharges from the service from unfitness so brought about, and brings prominently to the front the nature of the duties which devolve on the medical staff (in peace as in war)—sanitary, medical, surgical, in relative importance as placed—and the necessary professional qualifications of the members composing it if these highly important duties bearing on army efficiency are to be effectively carried out. And the pressing question in the near future is the degree to which these essentials will find expression in the conclusions of the committee to which the completion of the work of the South African Commission is to be entrusted. No mere "readjustment of the apparatus" or organisation, however otherwise complete, "can compensate for defective *personnel*," and unless a thoroughly efficient body of professional men well qualified in these respects can be obtained for the Royal Army Medical Corps and more power be given to it to make its influence operative in the army sphere for good, it is not apparent how the future can be an advance over the past. No doubt other qualifications of an administrative and military character are also necessary in this corps to which such multiple duties are entrusted, and should receive consideration; but the figures above mentioned indicate beyond all doubt that its true basis is *primarily and essentially professional*, a feature which does not seem to me to figure in its right proportion in the schemes advanced for the reorganisation of the corps other than in the original recommendations of the South African Commission. To obtain men of a good professional status is a *sine quâ non* if this corps is to be made fitted for its duties, and to retain each executive rank at a high standard is no less essential; and no less essential are these professional qualifications for the administrative grades for it is apparent that no proper inspection and supervision of the work of juniors can be made nor proper confidential reports for the guidance of those controlling selection can be furnished unless the administrating seniors possess the necessary ability and knowledge on which to act.

With a department organised on a military framework as the Royal Army Medical Corps now is the danger of not giving adequate expression to its right professional basis is apparent; in the past, except as a recommendation of the Crimean Commission, it has received no consideration; and in the future, unless there be a strong professional element in the constructive committee that is to be, it is difficult to perceive how it is to obtain the recognition it requires—as of paramount importance, as illustrated in the figures of the War Office return referred to.

I am, Sirs, yours faithfully,
FRANCIS H. WELCH, F.R.C.S. Eng.,
Surgeon-Colonel A.M.S. (retired).

Lee, S.E., June 10th, 1901.

SURGICAL OR MEDICAL TREATMENT IN GASTRIC ULCER?

To the Editors of THE LANCET.

SIRS,—The very interesting article by Mr. C. B. Keetley which appeared in THE LANCET of June 8th, p. 1597, on a series of cases of gastric ulcer demonstrates in a very clear

manner the value of operation in the greater number of those cases where hæmorrhage is persistent and profuse and where ulceration has existed for a prolonged period. But I am not quite at one with Mr. Keetley in the conclusion which is to be gathered from his summing up, that, broadly speaking, all cases of gastric ulcer should be operated on as soon as the diagnosis is assured, for it is by no means uncommon to have severe and frequently recurring hæmorrhage from the stomach of a patient, and yet when operation has been decided on and the stomach opened into the ulceration has proved so extensive (though superficial) that no radical treatment can be attempted, and, save for the benefit of washing out the viscus, the use of the knife is abortive. A case illustrative of this came under my care some little time back in Fremantle Hospital, Western Australia, a few notes of which I will quote. The patient was admitted to hospital on Feb. 4th, 1900, suffering from anæmia and hæmatemesis. Vomiting immediately after food was experienced and there was great pain in the epigastrium. The pulse was small and rapid and the temperature was 99° F. On the 5th the copious hæmorrhage from the stomach continued, the temperature was 101°, and the pulse was thready and very weak. A quarter of a grain of morphia was ordered to be administered every four hours, no food or liquids by the mouth being allowed. The bowels were opened by a soap-and-water enema and towards evening a mixture of peptonised milk, virol, and brandy was injected into the bowel. On the 6th no great improvement was shown to have taken place so operation was decided upon. The patient took the chloroform well and the stomach was exposed and opened near the greater curvature, an incision of one and a half inches being made. The wall was natural in appearance from the outside though a good deal of venous bleeding occurred in making the incision. The interior was congested and in some places it was superficially ulcerated, but in no part had the ulcerative process extended beyond the mucous membrane. A stream of weak boric acid solution was used to wash out the detritus and pieces of blood coagulum, the wound in the stomach was closed with a close row of Lembert sutures, and the operation was completed in the usual way. Six hours after the operation a hypodermic injection of digitalin and morphine was given, and a couple of quarts of tepid water per rectum did much to relieve the intense sensation of thirst. The patient had a good night. On the 7th teaspoonful doses of tepid water every 20 minutes were ordered. Two rectal enemata of milk, brandy, and virol were administered at 2 P.M. and at 6 P.M. There was a good deal of retching which was relieved soon after the administration of the digitalin and morphine hypodermically. There was no hæmorrhage or actual vomiting. On the 18th there was much retching. Two hypodermic injections of morphia and digitalin were given at 8 A.M. and 4 P.M. The wound was examined and was found to be doing well. On the 10th the patient was quite free from pain and retching and was feeling hungry. Rectal enemata only with water by the mouth were employed. On the 12th a tablespoonful of chicken jelly was given twice during the day by the mouth, and two tablespoonfuls of peptonised milk were given every four hours. The rectal feeding was continued. On the 15th the stomach held liquid food readily, a pint of strained beef-tea and two pints of peptonised milk with two tablespoonfuls of virol being taken in the 24 hours. On the 20th beaten-up eggs, custard, boiled rice, semolina, &c., were added to the diet. On the 25th a little minced chicken was taken, the patient was gaining strength rapidly, but the recumbent position was still insisted upon. From this date the progress of the case was uneventful, but the patient was not dismissed from hospital until six weeks after the date of admission.

Another case, on all fours with this one so far as primary symptoms were concerned, came under my observation some months later and was treated from a medical standpoint only by prolongod rest in bed, absolute avoidance of food by the mouth for a fortnight, and a steady but watchful administration of digitalin and morphine hypodermically. The results were highly satisfactory, the patient being sent out of hospital in three weeks' time quite recovered.

Many lives are undoubtedly saved by timely operation in this grave pathological condition, but it must be admitted that at least as many more run unnecessary risk by too early an interference, when even the most appalling hæmorrhage can be satisfactorily controlled by keeping the organ at perfect rest and by the judicious use of morphine and digitalin till the blood-pressure falls.

I am, Sirs, yours faithfully,

L. WHEELER, M.B., B.Ch. R.U.I.,
Surgeon, Fremantle Hospital, Western Australia.

Junior Conservative Club, Albemarle-street, W., June 10th, 1901.

PRELIMINARY MEDICAL EDUCATION.

To the Editors of THE LANCET.

SIRS,—As it seems possible that the negative given to Dr. McVail's resolution yesterday may be construed to affirm that the Council was satisfied "that the courses of study in the subjects of the first professional examination are in all cases sufficient," I think it right to state that so far as my vote and that of most, if not all, of those who formed the majority went, it was not intended to convey any such interpretation. I felt bound to vote against the resolution, because it withdrew from the Council the main question involved by the recent action of the London Colleges—namely, their ignoring the resolution of the Council requiring five years' study at a recognised medical school, and their consequently ceasing to require a certificate of registration from candidates for their licence. These, and not the standard of education, were the fundamental questions before the Council, and had Dr. McVail's resolution been carried all reference to these important questions would have been shelved. Further, Dr. McVail announced that the vote on that resolution would be final, so that not alone was no expression of opinion possible on these points, but no alternative course other than complete submission by the Council to the decision of the Colleges was possible. I seconded Mr. Ball's amendment because I consider that some arrangement which would place all the licensing bodies on an equality is most advisable; and while not pledging myself to details I consider the principle underlying that and Mr. Bruce's motion the best, not alone for licensing bodies, but for the advancement of medical education; for I am of opinion that when possible it is desirable that both physics and chemistry should be taught as subjects of preliminary education.

I am, Sirs, yours faithfully,

LOMBE ATTHILL, M.D Dub.

General Medical Council Office, Oxford-street, London, W., June 11th, 1901.

CÆSAREAN SECTION IN LONDON.

To the Editors of THE LANCET.

SIRS,—In your "Mirror of Hospital Practice" for June 8th, p. 1604, it is stated that "from 1886 to 1894 22 cases [of Cæsarean section] were recorded in the London Hospital." Will you permit us to say that this is erroneous, that no such number of Cæsarean sections have been either performed or recorded in the London Hospital during the period mentioned?

We are, Sirs, yours faithfully,

G. E. HERMAN,
ARTHUR H. N. LEWERS,
} Obstetric Physicians to the London Hospital.

June 8th, 1901.

*** We willingly publish this letter. It must have been obvious to every reader that the statement referred to was incorrect. The words "the" and "hospital" were interpolations owing to a printer's error. The reason of the error is clear; the case upon which we were commenting occurred in the London Hospital. The sentence should have read, "from 1886 to 1894 22 cases were recorded in London."—ED. L.

"LOCAL *v.* GENERAL ANÆSTHESIA IN CERTAIN CASES OF ABDOMINAL SURGERY."

To the Editors of THE LANCET.

SIRS,—Your correspondent, Dr. S. Johnson Taylor, finds fault with me for limiting my remarks on Mr. Morse's article to a particular question. My objection to Dr. Taylor's contribution is just the contrary, that he is leaving the point particularly raised by Mr. Morse and broaching the whole subject of what inconveniences and dangers attend general anæsthesia and whether a local anæsthetic can obviate these.

This is too large a question to discuss in your correspondence columns; my letter was to controvert a definite position of Mr. Morse's when he placed general anæsthetics in the first place as causes of shock in certain operation cases. I endeavoured to show that this is not justified by experience and that a properly selected and administered general anæsthetic is more likely to diminish than to increase the chances of shock. I am, Sirs, yours faithfully,

Sloane-terrace Mansions, S.W. J. BLUMFELD.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Effect of Famines on the Population of India.—The Decline of the Plague Epidemic.—The Coming Monsoon.—Decrease of Typhoid Fever in Military Stations.—The Kasauli Institution.—The Success of the Victoria Memorials.—Flagellar Fever in Malignant Tertian Malaria.

DURING the past 10 years it is estimated that the population of the whole of India has only increased by 28,000,000—a rate considerably less than that of the previous decade. There are only two factors which can have an appreciable effect on the number of the people. A diminished birth-rate may have contributed to this lessened increase, but its influence cannot have been very great. At the outside 20 per cent. may be put down to this cause. An enhanced mortality must be the chief factor. It is estimated that there were 20,000,000 more deaths than under ordinary circumstances there should have been, and if we put 1,000,000 deaths down to plague there remain 19,000,000 which can be attributed with some reason either to actual starvation or to the diseases arising therefrom. It is impossible to know how many people have suffered from the famines of the past few years. A further increase in the numbers under famine relief has recently occurred and the total now requiring help is 312,169. These facts speak for themselves.

The plague epidemic shows a still further decline. The total number of deaths returned for last week is 2592, against 3298 in the previous seven days. The improvement is general. In Calcutta there were only 134 deaths and in Bombay city there is a decline also. By the recent census the rate of mortality for the past week in Calcutta is 34·5 per 1000, but if calculated on the previous census it would have been 42 per 1000. In Bombay city the death-rate is 89·11 per mille calculated on the old figures of population, so that as the inhabitants have decreased in number the actual rate should be even higher. Cholera and small-pox being less than normal this extraordinary mortality has to be accounted for. There were only 375 deaths attributed to plague (out of a general mortality of 1357), which would, if deducted, still leave the rate of general mortality about 60 per 1000.

It is anticipated that the monsoon will occur earlier than usual this year. The conditions in the Indian Ocean from the Seychelles and Zanzibar show more rain and wind and are distinctly favourable. For some months past the rainfall in East Africa and Upper Egypt and the Soudan has been above normal and several storms have occurred in the Arabian sea. All these occurrences are said to be indications of an early and favourable monsoon for India. The rain-bearing current on the Bombay side and into Upper India may be adversely affected if snow-giving depressions come from the direction of Persia. The recent heavy snowfall in Chitral and the consequent high barometric pressure in Upper India caused some anxiety. It is the west of India where the famines have already occurred to which the uncertainty of the monsoon chiefly applies.

The reports from the various military stations in India continue to show a much smaller percentage than usual of typhoid fever cases. This is in all probability explained by the absence of drafts from home and by the retention of more or less seasoned soldiers. It must not be hastily assumed that the dangers of typhoid fever have been to any great degree lessened.

The Kasauli Institution continues to receive more and more recognition and support. A native gentleman has now come forward and presented a 16-roomed house in the bazaar for the accommodation of pauper native patients. There have now been 230 patients treated by Pasteur's antirabic method since August last and interest in the institute is evidently spreading in native society.

The All India Memorial to the late Queen Empress continues to receive widespread support. The total amount of subscriptions is now close on 34 lakhs of rupees—equal to over £220,000. The Victoria Scholarship Fund for training native midwives is also flourishing and the total sum received to date is 3½ lakhs of rupees.

Major Buchanan of Nagpur has recently published in the *Indian Medical Gazette* some important observations on exflagellation of the malarial parasite. He says that exflagellation does take place before the blood is drawn and he is thus opposed to the views of Manson and Celli. He describes three stages. The first or primary fever in which rings are found. The second period (after the primary fever) during which there is little or no fever, but in which there is a marked diminution of ring forms with an increase of crescents and at the end a few flagella bodies. The third period or flagella fever having a tertian appearance characterised by the rare presence of ring forms but by first increasing and then decreasing crescents and the presence of increasing and decreasing flagella bodies. The primary fever, he says, "is caused by the sexual sporulation of the rosette forms; the interval occurs at the time when the crescents are maturing. The secondary fever then comes on, and although it is contrary to the view held by Manson, Celli, Ross, Christy, and others, still we believe that this part of the fever is caused by the breaking-up of the crescents, or, in other words, that exflagellation does occur inside the body."

May 16th.

Rapid Decline of the Plague Epidemic.—The Continued Famine.—The Re-organisation of Municipal Health Departments.—The Education of Sanitary Inspectors.—The Health of Calcutta in 1900.

THE plague mortality throughout India continues to decrease rapidly. The returns for last week show a total of only 1918 deaths against 2592 in the preceding seven days. The improvement is general. Bengal returns 464 deaths against 758 the previous week; Calcutta 79, against 134; Bombay Presidency, 547; Bombay city 295, against 310; Madras Presidency, 9; Punjab 247, against 341; North-West Provinces 164, against 306; Karachi 154, against 289; Mysore, 21; and Kashmir, 28. On the basis that 100 deaths a week constitute an epidemic, as against the occurrence of so-called sporadic cases—a standard which has come somehow or other generally to be adopted—the epidemic in Calcutta is reported as having ended. The outbreak is thus calculated to have lasted for 16 weeks this year, as compared with 23 weeks last year.

Since my report last week on the increase of the numbers under famine relief I hear that the labourers thrown out of employment by the completion of the harvest operations are beginning to crowd to Government relief works in the famine area of the Bombay Presidency. There has been this week an increase of 30,000. In the native States increases are also reported and the total number under relief throughout India is now 418,046.

The municipality of Calcutta is waking up to its duties with regard to sanitary matters. A re-organisation of the engineering and health departments is in contemplation. It has been recommended by a sub-committee (1) that the conservancy department should be amalgamated with the engineer's department; (2) that the building department should be a separate department with a responsible officer in charge; (3) that the city should be divided into districts, each district being self-contained in the health, building, and engineering items; and (4) that a local municipal office should be established in each district which should be the centre of the municipal business for the district. This scheme is something like that adopted in Bombay, but it contemplates a much greater decentralisation of work and of powers. I have already reported upon the proposed sanitary improvements for every ward of the city.

The great want of Indian cities seems to be in properly educated sanitary inspectors. Something has been done to endeavour to supply this want by the Sanitary Commissioner of Madras and recently by the Bengal Government in offering scholarships to certain engineering students. I am glad to see that this matter is also being taken up by the new health officer of Bombay who has recently drawn up regulations for the examination and instruction of candidates for these posts. He includes in his subjects elementary

physics and chemistry in relation to water, soil, air, and ventilation; elementary statistical methods; municipal hygiene, including sanitary defects in and about buildings, water-supplies, sanitary appliances, drainage refuse removal and disposal, offensive trades, disinfection, and food inspection; and in addition the Bombay Municipal Act Statutes and the orders, memoranda, and model by-laws in force. This is a matter which might well be taken up also by the University of Calcutta. A movement has been recently on foot to establish a department of hygiene. In addition to granting certificates and degrees to medical men it might well institute a course of study and an examination for sanitary inspectors.

The health of Calcutta in 1900 has been recently commented upon by the Inspector-General of Civil Hospitals for Bengal. The past year has been an exceptionally unhealthy one. The death-rate of Calcutta rose to 53·88, and that of Howrat to 60·50, per 1000. There was an increased mortality from all the principal diseases. Plague undoubtedly was the chief factor in the increase, but the extraordinary rainfall in September caused a great mortality from cholera and diarrhœal complaints. The plague inspections at the port of Calcutta involved the examination of over 250,000 persons and the disinfection of the clothing and bedding of 79,255 persons. Small-pox was more prevalent than usual and 74 per cent. of the patients admitted to hospital were unprotected by previous vaccination. These figures show the inefficient state of vaccination in the city and the Lieutenant-Governor has animadverted strongly on the imperfect enforcement of the vaccination laws. Cholera also was more prevalent and the death-rate in the hospitals rose to 63·94 per 1000. There were 8354 deaths from plague, and of the 449 patients admitted to hospital 357 died, giving a death-rate of 79·51 per cent. This is about the same rate as occurs in the hospitals in Bombay. The various medical institutions of the city seem to be carrying on their work satisfactorily, but in one hospital there appears to be some evidence of overcrowding and the Campbell Hospital is said to suffer from the municipal refuse depôt and loading platforms being too adjacent.

May 25th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Banquet to Major Ronald Ross, F.R.S., late I.M.S.: The Fifth Expedition to West Africa Organised by the Liverpool School of Tropical Medicine.

MAJOR RONALD ROSS and the members of the expedition sailing on Saturday, June 15th, under the auspices of the Liverpool School of Tropical Medicine, were recently entertained at a banquet given by Mr. Alfred L. Jones, the chairman of the school. The guests included the Lord Bishop of the diocese, the Lord Mayor, Surgeon-General R. Harvey, C.B., D.S.O., Director-General I.M.S., Sir Edward Russell, and Principal Dale of University College. The chairman, on proposing "Success to the Expedition," said that the school was engaged in one of the greatest works ever attempted—viz., the endeavour to establish in the tropics the possibilities of healthy life as existing in temperate climates. They had accomplished much, and he gratefully acknowledged the sympathy which they had met with, both from the public and the press. These expeditions to West Africa had awakened public interest in a great question. They had also taught people in the tropics the possibility of combating malaria. He eulogised the work done by Major Ross in this direction and warmly congratulated him on his election to the Royal Society. He also had to announce that the Colonial Office had given instructions that the expedition was to have every facility for carrying out its work. Major Ross, in reply to the toast, said that he felt that night to be one of the proudest in his life. He had the honour to respond to the toast; he had received the honour of election to the Royal Society; and he sat between his present chief, Mr. Alfred Jones, and his former chief, Surgeon-General Harvey, and in company with his old tutor, Professor E. Smith. The expedition did not—he was glad to say it—consist solely of himself. It would include others who had helped this work on. In that respect he acknowledged his indebtedness to Mr. Alfred Jones, who had said that he would give the expedition enough plaster to cover Africa; to Mr. John Holt for his liberal gifts of oil; and to many others, including the manufacturers of various patent materials for killing insects. The expedition was not going out to prove the mosquito theory. That had been conclusively proved three years ago. It was a matter of absolute certainty, which was only doubted by amateur pathologists who were prepared with confidence to deny what was now accepted by every scientific man in Europe. They were going not to prove the theory but its applicability. They might not be able wholly to exterminate the mosquito, but he was satisfied from six years' study of the subject that they could reduce its numbers to one-tenth or even one-twentieth. He had, he was glad to say, funds sufficient to employ from 30 to 40 native assistants for one year and it would be their duty to clear Freetown (to begin with) of mosquitoes by filling up puddles, emptying tanks of water, and fumigating houses. Once that work had been carried out the municipal authorities would only need to keep it up. The experiment would go on for 10 years. In that time they hoped to work down to Accra and Cape Coast. The Bishop of Liverpool, in an interesting speech, said that commerce and science would go hand in hand. The time had passed when science could despise commerce as mercenary and material while commerce looked down on science as visionary. This School of Tropical Medicine was an instance of the results that might be expected from an alliance of the two. The school was in its infancy, but it had already moulded heroes prepared to carry the blessings of science to the ends of the earth.

Death of Mr. Thomas Cayzer, M.R.C.S. Eng., L.S.A.

Mr. Thomas Cayzer died at his residence at Grassendale on May 29th, after a short illness, in his sixty-seventh year. Mr. Cayzer enjoyed an extensive practice in the outskirts of Liverpool, and was widely respected by a large circle. He took a great interest in the Volunteer movement, and at the time of his decease was Surgeon-Lieutenant-Colonel in the 6th Lancashire Volunteer Artillery. He had also obtained the Volunteer decoration. To quote the words of a lay contemporary, "The corps has lost a worthy and most respected officer, whose sole idea was to do his duty to his country, to his corps, and to his fellowmen."

Hospital Extension at Wallasey: Local Government Board Inquiry.

Dr. E. P. Manby, Local Government Board inspector, held an inquiry at the public offices, Egremont, on June 3rd, respecting an application by the Wallasey Urban District Council to borrow £15,500 for the purpose of hospital extension for infectious diseases. The existing hospital was built 20 years ago, and then consisted of one pavilion containing eight beds, an administrative block, and a laundry. In 1894 an additional pavilion was erected to accommodate 12 beds and a small addition was subsequently made to the administrative block. The population of the district was now 53,000, an increase of 20,000 in the last decade. The proposed scheme included the erection of an additional 24-bed pavilion and a reconstruction and enlargement of the administrative block. With the addition of the 24-bed pavilion, the accommodation would provide 44 beds, and the site would ultimately accommodate two 24-bed pavilions and one eight-bed pavilion. The building would consist of a centre three-storey block, with the greater portion of the present administrative block as a wing to the east. A similar wing, providing additional bedrooms on the first floor and other accommodation on the ground floor, would extend to the west, but it would not be necessary to build this wing for several years. An engine-house, a new disinfector, as well as certain sanitary accommodation, were also included in the scheme, and the whole of the building would be fitted up with the necessary electric bells and telephones, as well as with the electric light. The extension, there can be no doubt, is urgently required, as during the late epidemic of scarlet fever it was no uncommon thing to find three or four people occupying a ward which was only intended to accommodate one person.

Hospital Saturday Ladies' Street Collection.

On June 8th the ladies made their annual street collection on behalf of the Hospital Saturday Fund. The city was divided in 85 sections, controlled by 47 heads of districts, each having a staff of workers, in all numbering close upon 1000. The day was summerlike, in fact all that was

desirable for a favourable collection. Last year £837 12s. 4d. were contributed in the same manner, and it is confidently expected that a substantial increase will result from the effort of last Saturday.

The Bootle Town Council and their New Medical Officer.

In consequence of the death of Mr. R. J. Sprakeling the post of medical officer of health of the borough of Bootle has become vacant. At the recent meeting of the Bootle Town Council the chairman of the Health Committee moved the adoption of a motion altering the conditions of service in the appointment of medical officer of health. The late medical officer was not debarred from private practice, but now, owing to the increase in the number of inhabitants in the borough, the Health Committee were of opinion that the time had come when the medical officer should devote his whole time to his corporate duties. The recommendation included a proposition that the medical officer of health should also perform the duties of visiting medical officer of the Linacre infectious hospital as well as those of surgeon to the police force and the fire brigade, at a salary of £350 inclusive. Exception was taken by several members of the council to the grouping of the offices which is certainly contrary to the general usages of other corporations. Moreover, it was pointed out that the council could not possibly expect a medical man who had spent the best part of his life in acquiring a special knowledge of public medicine to take up the three positions for such a small remuneration. After further discussion it was resolved to raise the salary from £350 to £400, and with this alteration the orginal recommendation was carried. The Mayor made a sympathetic allusion to the late Mr. R. J. Sprakeling who had occupied the position of medical officer since the incorporation of the borough.

Complimentary Dinner to Civil Surgeons who have served in South Africa.

It is intended to recognise the services of the local medical men who have served as civil surgeons in South Africa by a complimentary dinner to be held at the Exchange Station Hotel on June 20th. Mr. Edgar Browne, the President of the Medical Institution, will preside on the occasion. The movement is warmly supported by Sir William M. Banks and other prominent local practitioners.

June 11th.

WALES AND WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

Cardiff Infirmary.

THE mayor and corporation, the members of the Cardiff Medical Society, and the members of the board of management of the infirmary, with their friends, were invited to the opening of the new operating theatre by Mr. Edmund Owen on June 6th, and nearly 300 ladies and gentlemen responded to the invitation. The proceedings were of a very enthusiastic character and Mr. Owen delivered an ideal address for such an occasion, the picturesqueness of his description of the Good Samaritan being appreciated to the full by his audience.

Superannuation of a Poor-law Medical Officer.

At the end of last year the board of guardians of the Swansea Union decided to re-arrange the district for which Mr. D. Howell Thomas had been for many years medical officer and to appoint in his stead a medical officer to the workhouse who should give his whole time to his duties. Mr. Thomas resigned his appointments upon the understanding that he should have five years added to his term of service. At the last meeting of the board this addition was made so that Mr. Thomas is now entitled to full superannuation allowance.

Refusal to fill up the Census Schedule.

The enumerators employed in taking the recent census do not appear to have met with many downright refusals to give the necessary information to the officials. One such instance occurred at Pilney, in Gloucestershire, where a man of somewhat pronounced views flatly refused to give to the enumerator, the district registrar, or the superintendent registrar the particulars that the law required of him, stating that he considered it unnecessary and quite a mistake upon the part of any Government to take a census. The Registrar-General very properly gave instructions for this pronounced individualist to be prosecuted and he was fined £2 15s. 6d. It was stated during the course of the magisterial proceedings that the defendant was himself an enumerator at a previous census.

Taunton and Somerset Hospital.

The Taunton and Somerset Hospital was established early in the last century and the present building, in which there is accommodation for 100 patients, is quite out of harmony with the requirements of the present day. The governors have decided therefore to make very extensive alterations at a cost of £6500, towards which sum £3500 have already been promised. The principal alterations involve the enlargement of some of the wards with the re-arrangement of the sanitary offices, the removal of the kitchen to an upper floor, the provision of a hand lift and a lift for patients, the erection of a new block of 12 bedrooms for nurses, and the provision of external iron fire-escape staircases, together with a general renovation of the whole building.

The late Mr. Thomas Bond.

Much regret is felt in the west of England at the sad death of Mr. Thomas Bond in London. The deceased was a member of an old Somerset family and was accustomed to visit his native county during his holidays. He was well known as a follower of the Devon and Somerset staghounds, with which pack of hounds he hunted regularly every season.

Sanitary Matters in Glamorganshire.

At the meeting of the Sanitary Committee of the Glamorgan County Council held on June 7th the medical officer of health drew attention to the sanitary condition of Gilfach where, he stated, the sewage was discharged into ditches, then into the river. An epidemic of diphtheria with 20 deaths out of 116 cases had recently occurred there. The local district council had shelved the whole question of drainage and the provision of an isolation hospital. The committee decided to inform the local authority that unless they remedied the present state of affairs the county council would interfere.

June 10th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Glasgow University.

THE preparations for the ceremonies which are to mark the occasion of the ninth jubilee are now fully completed. Numerous distinguished guests and delegates have arrived in the city and everything promises that the arrangements will prove worthy of so distinguished and interesting an occasion. From to-morrow until the end of the week there will be an academic holiday and the students will be free to entertain their *confrères* from other universities and to take their part in several of the larger ceremonies. To-night they conduct a torchlight procession as a welcome to the foreign delegates. At the graduation ceremony which is to be held on June 14th numerous honorary degrees are to be conferred. The recipients for the most part will be distinguished delegates representing foreign and other universities and various learned societies and corporations. There are, however, to be some honorary graduates whose claim to recognition stands on a different basis. Prominent among these will be Mr. Andrew Carnegie who is to receive the degree of LL.D. The senate have also resolved to confer the same degree on Mrs. John Elder of Govan and on Mrs. James Campbell of Tullichewan. It is to these ladies that the University mainly owes the establishment and equipment of the Queen Margaret College for Women Students. The College buildings and grounds were presented by Mrs. Elder who also, at a cost of £12,500, founded in the University the chair of Naval Architecture, and gave a donation of £5000 as an additional endowment to the chair of Civil Engineering. A third lady, Miss Agnes Weston, who has so long and successfully devoted herself to the amelioration of the condition of the British sailor, is also to receive the honorary LL.D. degree. The fund for the extension and better equipment of the University continues to make progress. The total amount now reaches nearly £44,000. Amongst recent donations is one of £5000 from Mrs. Nathaniel Dunlop, one of £250 from Mrs. Paul Rottenburgh, and a similar sum from Mr. D. M. Stevenson.

Glasgow Royal Infirmary.

The proceedings in connexion with the reconstruction scheme have unfortunately not yet ceased to excite controversy. The action of the committee in setting aside the decision of the architectural expert (Dr. Rowand Anderson) whom they had summoned to their aid was much criticised at the time, but as in their recent statement the committee explained that the assessor's opinion in opposition to the selected scheme was not based on any failure in regard to vital or essential particulars, but mainly on a difference of opinion in respect of style of architecture and elevation, it was hoped that public confidence would be content with their judgment. Dr. Anderson has, however, written to the press strongly controverting the committee's statement. He asserts it to be entirely wrong to lead the public to believe that his rejection of the design in question rested solely on a question of architectural treatment. On the contrary, he affirms that he attached supreme importance to the qualities demanded in a building to be utilised for the scientific treatment of the sick and injured. The compliments bestowed by the committee upon the architectural and æsthetic virtues of the scheme they have adopted Dr. Anderson describes as rank nonsense, and with some vigour protests against "the ghastly absurdity of a baronial infirmary."—Dr. James Allan has been appointed physician to the infirmary in succession to Dr. John Dougall whose term of office has expired.

Proposed New Hospital for Consumptives near Aberdeen.

Designs have been prepared by Mr. George Coutts, architect, Aberdeen, for a proposed new wing for 16 phthisical patients at the Convalescent Cottage Home, Newhills, near Aberdeen, which is supported by voluntary contributions. There will be separate kitchen, dining-room, and sleeping accommodation, and every facility according to the best continental models will be afforded for open-air treatment. As soon as the funds permit a water-supply by gravitation will be introduced.

June 12th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Ulster Medical Society.

THE annual meeting of the Ulster Medical Society was held on June 6th in the Belfast Museum, the President, Professor W. H. Thompson, M.D., R.U.I., being in the chair. The reports presented showed that there are now 152 members of the society and that there is a balance in hand of £69 1*s.* 6*d.* The following office-bearers were elected for session 1901–1902:—President: Professor Whitla, M.D., R.U.I. Vice-Presidents: Dr. C. Shaw and Dr. James Colville. Treasurer: Dr. John McCaw. Secretary: Dr. Robert Campbell. Pathological secretaries: Dr. J. Lorrain Smith and Dr. T. Houston. Librarian: Dr. R. R. L. Leathem. Council: Dr. H. L. McKisack, Dr. W. Calwell, Professor Byers, Dr. W. B. M'Quitty, Professor Lindsay, and Dr. A. Dempsey.

Holywood Dispensary.

Dr. W. Donnan has been appointed medical officer of Belfast Urban No. 14 and Castlereagh No. 2 dispensary district in place of Dr. S. H. Dunlop (Holywood) resigned.

Irish University Education.

The latest pronouncement on this question is that of the Presbyterian Church in Ireland, which at the meeting of their assembly in Belfast on June 7th passed resolutions in favour of non-sectarian public education, as best adapted to the circumstances of Ireland, and against the establishment and endowment out of the public funds of a Roman Catholic university. A very strong resolution was also passed protesting against the appointment of a Royal Commission on university education in Ireland from whose inquiry Trinity College and Dublin University are to be excluded, and calling upon all the Unionist Members of Parliament in Ireland to resist any such appointment. Some of the speakers went the length of suggesting that the assembly should not appear before the Commission if Trinity College was excluded. There is still no announcement of the persons who are to act on this Commission; indeed, on June 7th Mr. Balfour said in the House of Commons, in reply to an inquiry, that he was sorry he could not give the names.

County Armagh Asylum Board.

At a meeting of the Committee of Management of this asylum on June 10th the report of the inspectors was submitted. It stated, *inter alia*, that owing to the lack of records it seemed quite impossible to fix the amount of the deficiency or the extent of the misappropriation of asylum stores which it was feared had taken place. The new system of keeping accounts only came into operation on April 1st, 1900, but it appeared that the keeping of the former records had been grossly neglected, a fact which even the most casual examination would have disclosed. Regarding the functions of the committee it was their duty to see that the institution was properly managed and to see that the resident medical superintendent acquitted himself of his duties; and although they could not be expected to supervise the daily working the inspectors felt assured that to appoint a sub-committee to visit the asylum and to associate themselves with the management would be of the greatest benefit. They trusted that as new and satisfactory appointments had been made to the posts of clerk and storekeeper, and as the resident medical superintendent fully realised his responsibility such a state of affairs would not again be possible.

Chronic Lunatics in Workhouses.

The question—a confessedly difficult one—of how to deal with chronic lunatics, of whom there are now 4000 scattered about in the various union workhouses in Ireland, is being a good deal discussed at present. How to maintain and treat these poor creatures, who are not dangerous to themselves or others, is being debated by county councils (who really are the rating authorities), by boards of guardians (in whose workhouses there are a large number of these chronic cases), and by the asylum boards who find their institutions over-crammed with patients. There are several courses open to a county council in dealing with this problem which affects both workhouses and asylums: (1) they may build a separate auxiliary asylum for chronic harmless lunatics, with a resident medical superintendent and at least one assistant medical officer; (2) they may add to an existing asylum buildings less elaborate than the original ones in the form of a new department to be placed under the care of the resident medical superintendent of that asylum; and (3) they may acquire and adopt some workhouse or other building either as a separate auxiliary asylum or as a department of some existing asylum. By an amalgamation of unions they might free some existing workhouse for the purpose of an auxiliary asylum. The Local Government Board have put these various courses before the county councils and they are now making inquiries as to what may appear possible in the way of amalgamating unions. The initiative rests with the county councils and of course it depends largely on local considerations which of the courses indicated is taken, having regard both to the welfare of the unfortunate people concerned and to the interest of the ratepayers. It is doubtful, at least in some cases, whether the erection of buildings specially fitted for the reception of chronic lunatics might not be cheaper in the end than the adaptation of the old ones originally built for a different purpose.

The late Physician to the Queen in Ireland.

Probate has been sealed in London of the will of Dr. William Moore, late physician to the Queen in Ireland. The personalty was sworn at £38,500, and the sole executor is his eldest son, Mr. William Moore, M.P.

June 11th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

An Institute of Colonial Medicine.

AN active campaign is being waged at present with a view to the creation in Paris of a school of colonial medicine. Professor Raphael Blanchard is at the head of the movement, and a public subscription has been started for the inauguration and endowment of the new institute. Already nearly 250,000 francs have been subscribed. Only recently M. Brouardel and a delegate of the French Colonial Union had an official interview with the President of the Paris Press Syndicate so as to obtain the aid of the press. A manifesto has been issued to the public, signed by M.

Berthelot, M. Brouardel, M. Gréard, M. Perrier, and M. Roux, in order to help the subscription lists. The manifesto points out that the recent extensions of the French colonial possessions have imposed upon France a new moral responsibility, both as regards the peoples who have recently come under her rule and also as regards Frenchmen who exile themselves in those far-off regions. Finally, it must not be forgotten that returned colonists may import new diseases into France. As a matter of fact, the special education given to medical men who may find themselves brought into contact with tropical disease is insufficient. The medical men employed in the colonial service are drawn from the following sources: (1) ordinary civilian medical men who learn nothing during their course of study about tropical medicine; (2) naval sanitary medical officers, a class dating from 1896, who are appointed after a very elementary examination and who in the great majority of cases do not possess that knowledge of tropical pathology which is necessary for the right understanding of disease; (3) military medical officers who neither at the Lyons schools nor at that of Val de Grace have ever studied tropical pathology; (4) naval medical officers from the Bordeaux school who during their six months practical course at Toulon attend twice a week a course of bacteriology and a theoretical course of tropical pathology; and (5) colonial medical officers, also from the Bordeaux school, who after they have received their doctorate are passed by a practical school (*école d'application*) without any preparation and can be sent out to serve in the colonies with only a very slight knowledge of tropical hygiene and pathology. All the same the promotors of the new enterprise are rather too much disposed to argue that there does not exist even the embryo of colonial medical teaching. At the Faculty of Bordeaux M. le Dantec, a professor *agrégé*, holds extra classes in tropical pathology. At the school of Algiers M. Brault holds the chair of tropical diseases to which are attached a certain number of beds at the Mustapha Hospital for the purpose of clinical teaching. At Marseilles the Municipal Council supports five chairs for special teaching. Both at Bordeaux and at Marseilles the wish is expressed that the new institute should be started in one or other of these two towns, and it would seem only reasonable that one of the large French ports should be selected for the purpose. They have hospitals in which are met cases of tropical diseases, so that they can be studied with their results under the eye of the student and it is difficult to understand why a desire should exist for the institute to be in Paris, where cases of tropical diseases are hardly ever seen and where colonial medical officers have no reason to live. Nevertheless, the committee of the Faculty of Medicine has passed a resolution to the effect that a course of instruction in tropical medicine and hygiene should be begun by the Faculty and attached to the already existing chairs of hygiene and medical natural history. The latter chair at present deals with nothing but parasitology. The committee of the Faculty of Bordeaux has passed an almost identical resolution with the addition of creating a new diploma—namely, one in colonial medicine. The course for this diploma will last three months and will include practical and clinical work as well as theoretical studies. The work will be supervised by the staff of the faculty and the total expenses will not exceed 200 francs. At present, then, Paris, Bordeaux, and Marseilles are at daggers drawn, but it is obvious that either in Bordeaux or Marseilles there are much greater facilities for teaching and organisation than there are in Paris. In Paris the whole system would have to be started as something new; the expenses would be heavy and in addition expenses would be imposed upon naval or colonial medical officers for residence, for as a class they do not live in Paris. The Paris Faculty of Medicine, however, has made the question one of personal *amour-propre* on account of being at the head of French medical schools and also perhaps because it wishes to use the occasion as a means of rebutting the accusation so often made that it is a reactionary body and opposed to all progress.

The New Director of the Assistance Publique.

The successor to the late lamented M. Napias has been appointed. He is M. Mourier who has hitherto been employed on the administration of the Conseil d'État and who, *ex-officio*, was member of the Conseil de Surveillance of the Assistance Publique. Political considerations have, as is always the case in France, determined this appointment. The new director is not a medical man, and report says that he holds very decided views in opposition to the medical staff of the Assistance, the encroachment of whom he deplores and the members of which he holds responsible for the unfortunate financial condition of the Assistance. He has already announced his intention of inaugurating great reforms, but all his predecessors have started with this programme. Political exigencies have, however, always stood in the way of the realisation of these schemes and time only can shew whether the new director will fare any better.

The Responsibility of Asylum Proprietors.

The First Chamber of the Civil Tribunal of the Seine has just given judgment in the case of the proprietor of an asylum at Fontenay sous Bois, named Duchamel. He was condemned to pay 10,000 francs damages to the parents of a neurasthenic young lady who hanged herself in the closet. The Tribunal based its judgment on the grounds that there must have been gross negligence on the part of those whose duty it was to look after the patient. She, as everyone responsible in the asylum knew, had already made two attempts at suicide and finally succeeded in hanging herself with the aid of a strip of stuff which she had in all probability cut off from her sheets.

June 10th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Inhalations of Oxygen.

A PAPER on Inhalations of Oxygen has been read before the Berlin Medical Society by Dr. Aron, who said that the atmosphere contained a sufficient proportion of oxygen to saturate the hæmoglobin of the blood, and as the hæmoglobin when saturated was, of course, unable to absorb more oxygen inhalations of oxygen were evidently useless. To obtain a more abundant absorption of oxygen it would be necessary to bring a greater quantity of hæmoglobin into contact with the air either by stimulating the circulation or, in cases of anæmia, by increasing the quantity of hæmoglobin in the blood, or by deeper respiration. Dr. Aron then explained that the statement of Professor Pflüger that in ordinary respiration one-fifteenth of the hæmoglobin remained unsaturated had no practical significance. Dr. Aron had found that the results of experience were in accordance with his theoretical views. The few instances in which the patients felt relieved by inhalations of oxygen were cases of dyspnœa in cardiac or pulmonary diseases but the improvement was maintained only while the inhalations were actually in progress. In bronchiectasis and in growths of the mediastinum there was no effect at all and the same was the case in chlorosis and anæmia. In one case of cardiac disease an embolism of the pulmonary artery followed the inhalations. In no instance was there a marked decrease of cyanosis. Inhalations of oxygen had also been recommended as a treatment for apparent death from drowning and for poisoning by morphia, but artificial respiration was just as efficacious. In poisoning by carbonic oxide and in rarefied air where the amount of available oxygen was less than in the normal atmosphere the administration of oxygen was advisable. Dr. Aron had found that in animals in which he had produced artificial dyspnœa the administration of oxygen was not followed by any perceptible influence on the circulation.

Specialists in Germany.

The *Deutsche Medicinische Wochenschrift* of June 6th contains an interesting article by Dr. Heimann on the specialists of Germany. As far as I know, this is the first time that statistics of the number of specialists and the proportion of them relatively to the general practitioners have been collected. The title of specialist not being an official one may be assumed by any medical man and it is matter of common knowledge that there are specialists practising for the most part in large towns whose special training consisted in a course of six weeks' duration at Vienna or even only at some polyclinic at home. A good many of these so-called specialists combine general practice with their specialty. Dr. Heimann's article is not based on official records which, of course, do not exist, but on the information supplied by the respective medical men and published in Dr. Schwalbe's medical directory. It shows how large

the number of specialists really is, for of 27,374 medical men in Germany no less than 3431 described themselves as such. There was one medical man to every 2014 of the population of the empire and one specialist to every 16,066 of the population. In Saxony there were no less than 370 specialists among 2048 medical men, the proportion thus being 1:5·5. The majority of the specialists, of course, resided in the large towns with more than 100,000 inhabitants, the number being 2068, or 60·3 per cent. of all the specialists; in the towns of medium size, with from 45,000 to 100,000 inhabitants, there were 512, or 14·9 per cent. of the whole, and in small towns with less than 45,000 inhabitants there were 851, or 24·8 per cent. of the whole. It might appear strange that so many specialists resided in small towns—but these latter included several university towns, with many professors and *privat-docenten*. Moreover, a great number of sanatoria, asylums, &c., were situated in small towns or in the country. Of the large towns, Stuttgart had relatively the greatest number of specialists, the number being 73, and their proportion to the general practitioners being 1:2·6; in Hamburg, where there were 107 specialists, the proportion was 1:5·2; in Berlin it was 1:6·4. Altona had relatively the smallest number of specialists, the total number being seven and the proportion to the general practitioners being 1:13·1. With regard to the classification of the several specialities it was found that 609 were ophthalmologists, 534 practised surgery, 533 were obstetricians and gynæcologists, 516 were specialists for diseases of the ear, the nose, and the larynx, 485 for mental and nervous diseases, electrotherapy, &c., 269 for internal diseases, 224 for diseases of the skin, 134 for diseases of children, and 127 for genito-urinary diseases. In Berlin, where there were 493 specialists, 47 devoted themselves to internal diseases, 56 to mental and nervous diseases, 75 to diseases of the ear, &c., 58 to diseases of the eye, 66 practised surgery, 10 were orthopædic surgeons, 46 were specialists for genito-urinary diseases, 36 for syphilis and diseases of the skin, 77 for obstetrics and gynæcology, and 20 for diseases of children.

Operations for Gastric Ulcer.

Professor Körte lately read a paper before the Verein für Innere Medicin on the Surgical Treatment of Gastric Ulcer. He said that the principal indication for operation was stenosis of the pylorus with dilatation of the stomach as a sequel of cicatrised ulcers; operation was also sometimes indicated in open ulcers of the pyloric or præpyloric region, when the pain was very severe and could not be relieved by internal treatment. Other indications were small but repeated hæmorrhages, profuse hæmorrhages, perigastric adhesions, and perforation of the stomach. In perforation, owing to the imminent danger of peritonitis, an operation must be performed as soon as possible and not later than 12 hours after the perforation had taken place. In the other cases—viz., in stenosis with dilatation, hæmorrhages, &c.—the indication was not so absolute as it was in perforation. The dangers to be anticipated depended on the nature of the case, on the general state of the patient, on the size and position of the ulcer, on its adhesions, &c. Some of the immediate dangers of the operation, such as infection of the peritoneum and giving way of the sutures, might be diminished by the adoption of improved methods, but there still remained a liability to complications over which the surgeon had no control, among which might be mentioned pneumonia, embolism, and hæmorrhage from open ulcers. Notwithstanding these dangers an operation must not be postponed too long, as in an exhausted patient the risk became, of course, much greater. Professor Körte has performed operations on 38 patients with gastric ulcers; in 17 cases there were open ulcers and in the remainder there were cicatrices. All the patients had been ill for a great while, some of them for as long as 20 or 30 years, and all of them had undergone protracted internal treatment. Their general condition was bad and they complained of gastric pains and vomiting. In 13 cases there was hæmatemesis; in 32 cases there was stenosis with dilatation, the seat of the stenosis being as a rule the pylorus; in one case, however, it was in the duodenum, in five cases in the præpyloric region, and twice in the middle of the stomach. Apart from stenosis operations were performed once for profuse hæmorrhage, 10 times for perforation into the peritoneum, and six times for perforation into the subphrenic tissue. With regard to the methods of operation, resection ought to be performed only when there were no adhesions and when the case was suspected to be one of cancer. In five circular resections one death occurred. Gastro-enterostomy was performed 29 times with a mortality of 20·6 per cent. In one case complicated with stenosis of the œsophagus gastro-enterostomy was combined with gastrostomy. Hacker's method was exclusively used without a Murphy's button, and only one pyloroplasty was performed. One patient had to be operated on for profuse hæmatemesis, a ligature was put on the bleeding artery and it seemed as if he might recover, but after a week he died from renewal of the hæmorrhage. Nearly all the patients operated on for perforated ulcer showed the symptoms of peritonitis. The operations were performed, as a rule, from 20 to 24 hours after the perforation had taken place, the result being that out of 10 patients only one recovered. In the discussion the views of Professor Körte were received with approval by Professor Ewald, Professor Rosenheim, Professor Fraenkel, and other speakers.

June 10th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

The Society for the Study of Malaria.

THE Minister of the Interior has placed the sum of 5000 lire at the disposal of the Society for the Study of Malaria as a contribution towards the expense of the prophylactic measures which they intend to adopt during the approaching malarial season; and the King himself has set a good example to all large land-owners in malarious districts by providing a sum of 10,000 lire to be employed for a similar purpose on his estate of Castel Porzano, where it will be remembered Dr. Sambon and Dr. Low carried out their successful experiment last year. The society have provided stations for study in the provinces of Udine, Verona, Vicenza, Padua, Ravenna, Pisa, Basilicata, and Siracusa, in addition to those already established in the provinces of Rome, Milan, Cremona, Mantua, Ferrara, Foggia, and Lecce. A special effort is to be made for the protection of the agricultural population against malaria. A prophylactic experiment on a large scale will be made along the Emilian coast; and, indeed, in all the malarial districts the authorities are exerting themselves in preparing for a vigorous anti-malaria campaign during the coming season. In the city, and especially in the Campagna of Grosseto, a careful series of prophylactic experiments from which valuable results are expected has been in progress for some time. The measure of success which has already attended the efforts of the society has led some foreign Governments, including those of Spain and Portugal, to apply to it for information as to the best methods of carrying out an efficient prophylaxis against malaria.

Sanatorium for Tuberculous Children.

The birth of the new Italian Princess has been made the occasion for a handsome donation by the King of 200,000 lire (£8000) to the Commune of Rome towards the erection of a sanatorium for tuberculous children.

Malaria and Typhoid Fever.

The record of cases in which malaria and typhoid fever have co-existed in the same individual is not yet an extensive one; or, rather, the cases in which a thoroughly reliable diagnosis has been made are not numerous. At a recent meeting of the Lancisian Society of Rome, Fiocca, who is known for his accurate investigations in connexion with Widal's reaction, reported an indubitable instance of this combination. The patient, who had never previously suffered from illness, paid a visit on Oct. 4th to Leprignano; on the 15th he was attacked with malarial fever and was admitted to the Hospital of St. Giacomo, where he remained until apparently cured till the 30th of the same month. He then returned to Leprignano, but was again taken ill and had to be re-admitted to the hospital on Nov. 25th suffering from a fever which continued till Dec. 28th with symptoms of typhoid fever, the blood giving a positive Widal reaction but showing no malarial parasites. After the latter date followed six days of complete apyrexia, and then, on Jan. 4th, another attack of malaria, with the presence of æstivo-autumnal parasites in the blood, which soon yielded to quinine. On the 10th the temperature

again rose, ushering in a relapse of typhoid fever which continued until Jan. 22nd, when another period of apyrexia followed lasting nine days. On Jan. 31st came another relapse, this time of malaria. Again quinine was employed with good effect, since which time the patient has kept quite well. Here, then, were present simultaneously the infections both of malaria and of typhoid fever, the former detected by the parasites found in the blood, the latter by the agglutination reaction of Widal which was obtained at different periods and varied in intensity from a dilution of 1 in 50 to one as high as 1 in 500. It would appear in this case that there was a tendency for the two diseases to keep themselves distinct and independent; when one ceased the other, after a short interval, began. This alternation could have been due only in part, if at all, to the action of the quinine which was not administered in sufficient doses till after Jan. 15th.

Medullary Anæsthesia.

As surgeons become more familiar with the effects of medullary anæsthesia the evidence grows that as at present practised—namely, with injections of cocaine or its derivatives—the method has certain very distinct drawbacks which render its general use objectionable. Bier himself who introduced the method is of this opinion after an experience of over 1200 cases. Lugli, who has operated at the hospital of S. Giacomo on 75 cases, noted as immediate after-effects formication in the lower limbs, a sense of weight there, or the feeling that the limbs themselves were entirely gone, pallor, retching, more or less obstinate vomiting, sweating, depression of spirits, acceleration of the pulse with diminution of arterial pressure, occasionally vertigo, involuntary emissions of fæces and of wind from the bowel, tremor more or less intense and diffused, and pain at the seat of injection. As later effects he observed headache, usually frontal, sometimes occipital, lasting not more than two days and mostly slight; increase of temperature for not more than from two to three days, generally moderate, but once or twice rising to 102° or 103° F.; rarely vomiting; very rarely vertigo and temporary difficulty in micturition; and frequently pain in the lumbar region and near the point of injection. The later disturbances are of no importance, but the effects immediately following the injection, though usually transitory, are sometimes exceedingly severe. In three cases they were of the gravest and most alarming description, and in one they were attended with a fatal result. This last was in a man, 60 years of age, with a hernia which had been strangulated, and perhaps gangrenous, for over three days, the subject besides of sclerosed arteries, emphysema, and generally in a condition of great gravity, enough, perhaps, of itself to have led to the unfortunate issue. The quantity of cocaine was 16 milligrammes (about a quarter of a grain) and death took place after four hours.

Professor Albertoni of the University of Bologna.

Professor Pietro Albertoni has now been for 25 years a medical teacher, and the completion of this long term of academical work was on May 31st made the occasion of an interesting ceremony. Professor Albertoni took his degree at the University of Padua in the year 1873, and three years later, at the age of 27 years, he was nominated Professor of Physiology at the University of Siena. In 1878 he removed to the University of Genoa, where he received offers of chairs in several universities, and eventually he proceeded from Genoa to the University of Bologna as Professor of Pharmacology and afterwards of Physiology, which latter subject he is still teaching. Among his numerous original investigations mention may be made of his work on the functions of the cerebellum, on the action of sugars in the body, and on the food of the Italian peasantry. His scientific pursuits, moreover, have not prevented him from taking part in politics and public life, for he is a Member of Parliament for his native Lombardy and a town councillor of Bologna. A numerous company was present at the ceremonial of May 31st, and the mayor offered him the congratulations of the town which is proud to own him as a citizen. He was presented by his pupils with a gold medal, the obverse of which shows his head surrounded by a laurel-wreath; on the reverse is the following inscription: "A Pietro Albertoni; I discepoli; Siena, 1876—Bologna, 1901." He was also presented with an artistically illuminated address, accompanying a volume of treatises by several medical men who have worked in his laboratories. The Medical Society of Bologna presented him with another gold medal which on the obverse bears emblems of medicine and pharmacology, with the inscription, "Societas Medico-chirurgica Bononiensis"; on the reverse:—

Petro Albertonio Gazoldiensi
Physiologiae tradendae munus
Annum jam quintum et vigesimum
Summa cum laude obeunti
Sodales medici.
Anno MDCCCCI.

June 7th.

EGYPT.

(FROM OUR OWN CORRESPONDENT.)

The Close of the Season.

THE Cairo season is now over and nearly all the hotels are shut except two large ones which cater for summer visitors. In spite of the South African campaign and of the national mourning the season has been a fairly good one, for Egypt, instead of being visited by only a handful of Englishmen as was the case 20 years ago, has now become a winter resort for Americans, Germans, and many others. The Americans alone run special palatial steamers during January and February from New York to Alexandria *viâ* Italy, and though they never stay long in the country they spend their money freely to the great enjoyment of the hotels and bazaars. As regards health the season has been exceptionally prosperous, for it is the first time since the beginning of the present pandemic that influenza has not been brought to us from England or America. There has therefore this year been no localised epidemic, small-pox has not been heard of among the visitors, and there have only been one or two cases of typhoid fever. Curiously enough scarlet fever, which is very rare in Egypt, has been present among some of the women and children of one of the Scotch regiments, and last summer the matron of a hospital where scarlet fever is quite unknown contracted the disease. It is difficult to know how these sporadic cases occur unless the infection is imported from England by parcel post.

Improved Steamers.

By the new express steamers which carry the Indian mail from Brindisi to Port Said it is possible for patients to dine in London on Friday night and in Cairo on the following Wednesday. When these steamers were first started three years ago passengers complained bitterly of their vibration, but now the propellers have been altered and although they go at a pace of 20 knots an hour their motion is not unpleasant; in fact, in calm weather a sort of yachting excursion can be taken through the Greek Islands by Cephalonia, Ithaca, Sappho's Leap, and the Styx. Their coal consumption is 120 tons per day, with 350 electric lights on board, and their mail capacity is 300 tons which represents every week 3000 bags, including 1000 for India, 800 for Australia, and 300 for Egypt, besides bags for China, Ceylon, and other places. Another advantage of travelling by this route is that there are no Customs examinations between London and Egypt and a special train now runs down to Brindisi wharf close to the steamers. Sometimes, as during this month when Italy is afraid of contracting plague from India, the steamer and even the train have to run through in quarantine and an Italian medical man accompanies the steamer so as to protect Europe from infection. The P. & O. Company are obliged to pay him a fee of £1 per day. Mail steamers grumble at the vexatious quarantine laws, to which, however, they are obliged to submit. One of their complaints is the delay which occurs at Suez. As an instance of which they cite, the P. & O. s.s. *Australia* which lately reached Suez at 6.25 P.M., and pratique was refused because it was after sunset, so she could not enter the Canal until 9 A.M. next morning. This was especially hard as they had spent £250 in extra coaling in order to get mails and passengers quickly from Aden to Suez.

Sanitary Department.

The budget has been increased this year by £3800, which allows provision for the appointment of European sanitary inspectors in Cairo, Port Said, and Suez. These posts have hitherto been filled by natives who were practically useless. Dr. Dreyer, a German bacteriologist, has now been appointed to Cairo, and Dr. Baker, an Englishman, to Port Said. Another crying want has been remedied, for the minimum

salary of native medical men has been raised from £72 to £96 per year. It is absurd to expect a trained medical man to be honest and respectable upon a small salary when he is surrounded by many temptations to increase it by unfair means which all his predecessors have employed for generations. Port Said has had no plague since last year's epidemic of May, June, and July, but a careful look-out has been kept for any new infection. Port Said is perhaps as much exposed as any other part of the world to the possibility of plague infection, for it is visited almost daily by steamers stopping to coal from India and China on the one side and Turkey and the Greek Isles on the other. An interesting experiment is being made by examining the rats of the town. All those caught in traps are kept for a week without being handled. If still alive at the end of the week it is assumed that they cannot possibly have plague and they are drowned and their bodies burnt. If, on the other hand, they die their corpses, under proper sanitary precautions, are sent for bacteriological examination and analysis. No plague has yet been discovered in the rats, but I mention it as it seems a very good method of discovering plague before it attacks human beings. The rat or the rat-flea theory of infection has been brought into prominent notice by Dr. Ashburton Thompson's report on the Outbreak of Plague in Sydney of last year. He believes, and gives reason for his belief, that the Sydney epidemic "was caused by communication of the infection from rats to man." Perhaps Port Said has never been so clean before in its life as it is now, for in addition to all plague precautions whitewashing has continued because of an outbreak of small-pox, and no less than 30,000 people out of a population of 43,000 have been vaccinated since the beginning of the year. These figures must be compared with the total vaccinations and re-vaccinations of 1898, which were 1558, and those for 1899, which were 1358. A disinfecting stove has now been given to Port Said which is used compulsorily by the natives and by the Europeans through the intervention of their consuls. There is as yet no infectious hospital, though this is a thing very much wanted. Port Said is distinctly improving in civilisation. There are now three hotels and a fourth is to be opened next winter. It seems to be generally recognised that Port Said is to be the future gate of Egypt, though the financial interests in Alexandria will probably continue to combat this view. In order to render communication easy between Cairo and Port Said it will be necessary for the Government to take over and to enlarge the existing railway line running along the Canal from Ismailia to Port Said, and this they will probably do when they succeed in coming to terms with the Suez Canal Company, to whom the present miniature railway belongs. A restaurant car has now been added to trains leaving Cairo for Alexandria, Ismailia, and Upper Egypt, so that travelling in Egypt is no longer a hardship.

European Hospitals in Cairo.

The so-called European Hospital, which was governed by the various consuls, has now been closed as being no longer necessary, for the leading nationalities have all found themselves in a position to erect a hospital of their own. The Germans and Austrians have for some years each had a hospital, while the Greeks and Italians are now about to build one. The French have just opened a very good hospital of 30 beds in the desert outside Cairo. The land was bought from the Government at the nominal rate of 1*s.* per square metre, and therefore only cost £600. The building has cost £6000 and it consists of 20 third-class beds the occupants of which pay from 2*s.* to 3*s.* per day; four second-class beds at 6*s.* per day; and six first-class beds at 10*s.* a day. Besides this there are an up-to-date operating theatre and dressing-room for surgical patients, with two separate blocks—one containing four beds for isolation cases and one bed for possible lunatics and the other comprising kitchen, laundry, &c. The hospital is nursed by five sisters belonging to the well-known order in the East of St. Vincent and St. Paul.

Anglo-American Hospitals.

After some years of quiet deliberation the Anglo-Saxon community has now decided to build a private hospital in Cairo for their own needs and the Alexandria residents have at the same time come to a similar decision. In both cities a fund of about £9000 has been raised and a committee has been formed to raise more money and to decide next winter upon the purchase of land and the preparation of plans. At present English and American patients who cannot afford to pay the charges of nursing homes are dependent upon the hospitality of the German hospitals both in Cairo and Alexandria.

Cairo, June 3rd.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Reciprocity in Medical Practice in the United States.

A LEADING article which appeared in THE LANCET of Jan. 26th, taking as the text for comment an address by Dr. Emil Amberg upon the need of reciprocity in medical practice between the various States of the American Union, aroused much interest in this country. Of course, it would be but a trite remark to make that the leaders of the medical profession in the United States and a majority of the practitioners recognise clearly and confess freely that things are not as they should be with regard to medical education and laws here, and that efficient reforms might and ought to be introduced as quickly as possible. The difficulty has ever been how and where to begin. It would seem now as if an energetic and definite attempt is to be made to grapple with the problem. A committee of the American Medical Association on Organisation has recently published its report in the Journal of the Association and in other medical journals, part of which, dealing with the question of medical education reads as follows:—"As is well known the subject of medical education was taken up by the association early in its existence, and much was done to raise the standard, but in recent years little has been attempted. At the present time there are altogether too many medical colleges, and one of the greatest dangers which now threatens the medical profession in this country is found in just this fact. This is not due alone to the pouring into the profession each year thousands of ill-prepared men, with a lesser proportion it may be of those who are really fitted for their life-work, but in the commercialism, the strife, the petty ambitions and general demoralisation which go with these, including free dispensaries, free clinics, and free hospital service. The evils are brought on by ourselves and can be corrected only by our own efforts. There is to-day, however, no way for the profession of this country to act upon this question in an organised capacity. ..... The question is one that cannot be settled by legislation nor by public sentiment, but by professional sentiment, and when this can be created in the right way and a solution of the question proposed, professional sentiment will carry out the plan adopted." With respect to medical legislation and reciprocity the same report says: "We have here a peculiar position. There are 50 different territorial subdivisions, if the district of Columbia and the territories are considered with the States, and no two of them have the same medical laws. Yet there is not a medical law on the statute books of any of the States or territories that was not put there through the efforts of physicians. ..... It is presumed that if a few States had a law that was giving satisfaction, it would not be much trouble to get that law passed in those States which had not adopted it. It may also be presumed that if the profession asked for the same enactment in every State and persisted in its demands, it would in time get such a law The profession would be working for a common purpose in every State in the country, and before long the essential features of the ideal law that was agreed upon would be adopted. At present, however, there seems to be no way by which the various State societies can get together to consider such a matter. The need of reciprocity comes from the fact that in enacting medical laws in one State no regard has been had for what might be done in this direction in another." Each State is indeed a law unto itself and only takes such action in medical legislation as its medical advisers represented by the State societies deem will best suit its own interests, and ignores the fact that the brethren in neighbouring States may be injuriously affected by such legislation. However, all this is well known in every part of the United States, and a large number of medical men in Great Britain are almost as conversant with the true condition of affairs. It is hoped that by careful organisation of the medical profession throughout America this anomalous and, to a great extent,

disastrous situation may be changed and reforms introduced which will place the question of inter-State reciprocity on a sound and workable basis. In the report the members of the committee explain at length the steps which in their opinion should be taken to bring about so desirable a consummation, and they conclude by expressing the belief that their recommendations are in no way Utopian or impracticable, but that they are such as can be carried out in every part of their great country and that they will result in a scientific, social, and material benefit to the individual and to the profession as a whole, as well as to the well-being of the people. There can be no doubt that necessary reforms will not be put through at once or without much difficulty, but a beginning must be made and it is a healthy sign that the association intend to push forward.

The Cost of Crime in the United States.

Mr. Eugene Smith of New York has recently published in pamphlet form a paper on this subject which he read before the National Prison Association at its annual meeting of 1900 held at Cleveland, Ohio, and which contains much interesting information. In analysing the statistics of certain large cities in the United States where the statistics are known to be accurate and complete, the following figures are given as the cost of crime in New York, Cleveland, Chicago, St. Louis, San Francisco, Richmond, Charlestown, Savannah, and New Orleans. The cost of crime in the city of New York paid from city and county taxation reaches the portentous total of $20,000,000 (£4,000,000), giving an average charge of over $6 (£1 4*s.*) for each individual in its population. In San Francisco the average charge per person is about $5 (£1), and in the other cities named the per capita tax runs with slight variation, from $3 (12*s.*) to $3·50 (14*s.*). The striking excess of the rate in New York and San Francisco above that of the other cities is explained in part by one very important fact—in New York and San Francisco the rate includes county taxation while the rate in other cities does not. From such light, says Mr. Smith, as can be gained from the reports of these cities and from other sources it would appear that about $1 (4*s.*) should be added to the prevailing per capita rate of from $3 (12*s.*) to $3·50 (14*s.*) in order to include county taxation. This makes the total amount of both city and county taxation caused by crime paid by the dwellers in cities average from $4 (16*s.*) to $4·50 (18*s.*) for each inhabitant; but to cover variations and to make the final result a conservative one I should prefer to reduce the estimate as low as $3·50 (14*s.*) per capita. Mr. Smith estimates that there are at least 250,000 criminals in the United States and that each one earns yearly on an average $1600 (£320), representing an annual aggregate income of $400,000,000 (£80,000,000). To this must be added the yearly taxation caused by crime of $200,000,000 (£40,000,000), giving the enormous total of $600,000,000 (£120,000,000). These figures are startling in their magnitude and even if they are exaggerated somewhat they convey a fairly accurate notion of the cost of crime from a pecuniary standpoint.

Obituary.

THOMAS BOND, F.R.C.S. ENG., M.B., B.S. LOND.

MR. THOMAS BOND, whose death under very sad circumstances we announced in THE LANCET of June 8th, p. 1618, was a man of many parts. Coming of a Somersetshire family he not only had numerous county friends, acquaintances, and experiences, but in his career as surgeon in the Prussian service, to a large London hospital, to the police, and to sundry railway companies, as well as being a well-known figure in the hunting field, he accumulated experiences among all classes, and there was, perhaps, no medical man who could recall more remarkable incidents of practice. He commenced his medical studies by being a pupil of his uncle, Dr. McCann of Southampton. Coming to London he entered at King's College Hospital and gained the Gold Medal at the B.S. examination of the University of London. His first appointment was that of house surgeon to Sir William Fergusson of whom he could tell many stories. Once when the carotid was cut and spouted freely Fergusson did not stir, but said to Bond, "Put your finger on it, mon." Whilst he (Fergusson) was excising the knee he cut the popliteal artery and forthwith amputated. Then turning to the gallery he said, "You notice, gentlemen, that in the middle of the operation I changed my mind." After having dined at Greenwich Bond was made to walk all the way home with him.

In 1866, having finished at the hospital, Mr. Bond joined the Prussian military service where he had full experience of a cholera epidemic. He was himself saved by a heroic dose of castor oil taken at the onset. He further ventured his neck in carrying a despatch from the Prussian, through the Austrian, into the Italian lines. Returning home he set up practice in Westminster, succeeding to that of "old Dr. McCann" of Parliament-street, and lived for a time in Delahay-street before going to Broad Sanctuary. His first experience of railway accidents consisted in his train being overturned into shallow water, when he gave immediate aid to the injured. His last important work was in connexion with the Slough accident, which obliged him whilst suffering to travel as far as Balmoral one way and Penzance the other.

Having set his mind on being one of the staff at the Westminster Hospital, he had to face several contested elections before winning the post, which he did in 1873. Even then he spent practically all his life there as assistant surgeon, so that he had no opportunity of following up the promise he gave as a student of becoming a prominent operating surgeon. It was only some five years ago that he was appointed full surgeon. The surgery he chiefly had to do was, to use his own words, "of the fore and aft sort." When he at last did become full surgeon it was too late for him to begin many modern operations. Besides, his accommodation was defective and he had scarcely as much "nerve" in the operating theatre as when riding at a fence. He had, indeed, evidently been much impressed by the large mortality which attended the surgery of former days, and this impression weighed heavily against himself when illness came.

One day he was called into the Law Courts at Westminster where a judge had been seized with apoplexy, a case which started his large legal connexion and at the same time introduced him to the judge's daughter whom he married. It is mournful to think that she also had a lingering and painful illness before her death some two years ago. His house being near the headquarters of the police and his service as surgeon to the A Division, to which he was appointed in 1867, led to his connexion with many important criminal causes. Among these were the case of Kate Webster, the Lamson case, the Pearcey case, the Whitechapel murders, and the Lefroy case. By common consent he was the best of medical witnesses. His clear evidence inspired the bench and the bar with the fullest confidence, and he was never afraid to say "I don't know." His reminiscences put novels of the "detective" order into the shade. His extraordinary experience of railway accidents rendered him proof against malingering of whatever kind, although he had sometimes to expose frauds which had imposed upon less experienced men. It would have been better perhaps for him if he had confined himself to strictly medical duties and not yielded sometimes to pressure put upon him by the railway companies to act as a go-between in fixing the amount of compensation for accidents.

As regards non-professional occupations Mr. Bond was brought up to horses from a boy, and he rode well and hard with a good seat and at a pace which did not spare his horse. He hunted regularly, of late years chiefly with the Badminton hounds from Chippenham. But what he looked forward to most of all was the staghunt on Exmoor in August and September, riding out to the meets from his house at Dunster. He knew his way among the bogs as a native, he could get down and up again out of a combe quicker than most, and none knew better where to wait for the stag to break up from the woods by the sea near Glenthorne. Perhaps of all his accomplishments he himself set most store on his knowledge of horseflesh, as controversial a matter as the medico-legal subjects in which so much of his practice lay. He often acted as judge at the more important horse shows. His multifarious duties strained the health of a really strong man. He would return to Paddington by night and sleep on in the carriage until morning, then do a full day's work, and after that sit up late over legal and police reports. Riding tended of late to irritate a slight organic contraction and the spasm set up led to instrumentation often under unfavourable circumstances, so that a lesion attended by thickening was started at and below the neck of the bladder, whilst the organs above remained healthy throughout. Hence a terrible vicious circle, the necessity for instrumentation, and the spasm and radiating pains which this caused.

In addition, latterly there were attacks of general rheumatic pains with rigors and sweating. Insomnia in middle life from overwork had tempted him towards the use of narcotics. Even then he used to say that the impulse which afterwards caused his death forced itself into his mind and it constantly recurred when he was driven wild by pain during his last illness. He retained, except when suffering, those characteristics which will recall him to that vast number of acquaintances who have heard of his sad death with grief. He was buried on June 10th in the little country churchyard of his old home at Orchard Portman.

JAMES AITKEN MYRTLE, M.D. EDIN.

As we announced in our issue of June 8th Dr. James Aitken Myrtle died very suddenly on June 1st. Dr. Myrtle, who was in his 41st year, was born in Harrogate and educated at Winchester College and Edinburgh University, where he graduated as M.B. and C.M. in 1882. He then proceeded to Vienna and Würzburg to study diseases of the skin and other special branches of medicine and after about one year's absence he returned home and joined his father, Dr. A. S. Myrtle, in practice at Harrogate. In 1885 he graduated as M.D. He was co-editor with his father of a book entitled "Practical Observations on Harrogate Mineral Waters" and he also contributed papers upon "Paroxysmal Hæmaturia" and "Gout, Rheumatism, and Rheumatoid Arthritis" to the medical journals. Dr. Myrtle was well known as a politician. In the field of medical politics he was an ardent advocate of medical defence—a subject which he brought forward at many meetings of the British Medical Association, notably at Edinburgh in 1898. But if in professional politics he was a reformer, in those of the State he was a strong Conservative. He had been a member of the town council for five years, and at the time of his death was serving as mayor for the second time. A keen sportsman and in his younger days a good all-round athlete, his greatest pleasure was hunting and he was a bold and skilful horseman. He was surgeon-lieutenant to the Yorkshire Yeomanry Hussars and had always taken a keen interest in volunteering, having been a member of the cadet corps at Winchester. In 1887 he married, but he had no children. The funeral took place on June 5th, the procession from the church to the cemetery including officers and men of the Yorkshire Yeomanry Hussars, the local members of the 1st Volunteer Battalion West Yorkshire Regiment, and the civic dignitaries and members of public bodies.

NOTIFICATION PROSECUTIONS.—At the Exeter Police-court on June 7th five persons were fined in sums ranging from £1 10s. to half a crown for failing to notify cases of scarlet fever and permitting children suffering from it to be at large. The town clerk stated that the medical officer of health had visited the schools and found about a dozen children in the desquamating stage of scarlet fever. These cases had produced an epidemic of the disease and through the neglect of the parents had cost the city from £300 to £400.

THE STATE CHILDREN'S ASSOCIATION.—In the fourth annual report of the State Children's Association reference is made to a speech by Mr. Chaplin in which, while congratulating the barrack school officials on the improvements recently effected in the schools, he said that the policy of the future would be that of rearing children by methods of segregation—which are the methods the association exists to promote—and to a quotation from a circular issued by the Local Government Board to every board of guardians suggesting that by the provision of cottage homes, by the hire of scattered homes, by boarding-out and emigration, children might be entirely removed from the workhouse and its associations. There are still 3141 children in the metropolitan infirmaries and workhouses—a larger number than in 1894—notwithstanding the official condemnation of the practice of keeping children in such unsuitable environment, and although barrack schools have been condemned the expenditure of £48,000 has within the last five years been sanctioned by the Local Government Board on their structural improvement. The report, which is an instructive document dealing with social reform, can be obtained at the offices of the association, 58, Old Broad-street, E.C., and from Messrs. P. S. King and Son, 2 and 4, Great Smith-street, Westminster.

THE GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION.

THURSDAY, JUNE 6TH.

THE Council met to-day with Sir WILLIAM TURNER, the President, in the chair, and resumed the work of its session.

Recognised Scientific Institutions.

The Executive Committee presented a report in which there was submitted for the approval of the Council a list of scientific institutions other than universities or schools of medicine recognised by licensing bodies as places where the course of medical study may be commenced by applicants for registration in the Medical Students' Register.

Several members took exception to the list and it was arranged that it should go back to the Executive Committee for amendment.

The Case of Walter Randall Knightley, R.N.

The Council then took up the consideration of the case of Walter Randall Knightley, R.N., registered as Mem. R. Coll. Surg. Eng., 1892; Lic. R. Coll. Phys. Lond., 1892, who had been summoned to appear before the Council in consequence of a judgment given in the High Court of Justice, Probate, Divorce, and Admiralty Division on Dec. 21st, 1900, in the case of Harvest *v.* Harvest and Knightley.

Mr. Knightley attended with Mr. Cripps, K.C., M.P., and Mr. Heaton, solicitor, as his legal representatives.

The PRESIDENT explained that the case would be conducted by the solicitor to the Council.

Mr. WINTERBOTHAM said that the case was one in which there was no complainant. His attention had been called to it by what had appeared in the public press and he thought it was a case which should be brought to the notice of the Council in order that it might consider whether Mr. Knightley's conduct was such as came within the definition of "infamous conduct in a professional respect." The facts in the case were that Mr. Knightley was a surgeon in the Navy and was on duty at Gosport when called in to attend professionally the wife of Major Harvest and the jury found that Mr. Knightley committed adultery with Mrs. Harvest and gave the petitioner £4000 damages. Mr. Winterbotham read to the Council the charge to the jury delivered by Sir Francis Jeune, President of the Court, in which Mr. Knightley's conduct was severely condemned.

Mr. CRIPPS, in addressing the Council, said that the main point he wished to press was the question whether anything could be shown in mitigation. He was not instructed by the solicitors who had conducted Mr. Knightley's case in the divorce proceedings and what he wished to urge was that the Council should postpone consideration of the case. He asked this because if his client were struck off the Register that *ipso facto* would deprive him of his position in the Royal Navy as a medical officer. His client had begun his connexion with the Royal Navy in 1893. He had served on H.M.S. *Excellent*, on H.M.S. *Albacore*, on H.M.S. *Camperdown*, and as surgeon to the Royal Marines. After the divorce case all the documents in the case had been placed before the naval authorities, and subsequently to examination of them Mr. Knightley had been appointed as surgeon to H.M.S. *Harrier*, a position which he at present occupied. The certificates he had received from the captains he had served under showed that he was a man of sobriety and good conduct. Having now been in the navy for nearly eight years Mr. Knightley required to serve only eight months more to earn a gratuity of £1000 on retirement. He, however, wished to remain a naval officer. He did not wish to retire from the service, nor did he intend, should he retire from the navy, to follow the practice of an ordinary medical practitioner.

Mr. KNIGHTLEY was asked to go into the witness-box. He went there and bore out the statements of Mr. Cripps as to his naval career and mentioned that his family, as a compromise, had paid £3000 in respect to the damages awarded by the jury in the divorce case.

No questions were asked by the Council. After deliberating on the case *in camerâ*

The PRESIDENT announced the Council's decision. Addressing Mr. Knightley he said: I have now to tell you

that the Council has judged you to have been guilty of "infamous conduct in a professional respect" and has directed its registrar to erase your name from the Medical Register.

Dental Cases.

The REGISTRAR (Mr. ALLEN) read a report by the Dental Committee on the case of Mr. George Thomas Ockleford Crocker, which was as follows:—

The complaint against George Thomas Ockleford Crocker having been referred to the Dental Committee to ascertain the facts the Dental Committee beg to report as follows. On Feb. 26th, 1901, the following parties with their witnesses attended before the committee and were duly heard—namely, Mr. James Lorden Crocker (by Mr. Woodhouse, his solicitor), the complainant; and Mr. George Thomas Ockleford Crocker (by Mr. Emmanuel, his counsel, instructed by Mr. P. J. Nicholls, solicitor).

The committee find that the following facts were established by the evidence: (*a*) George Thomas Ockleford Crocker was registered in the Dentists' Register as in practice before July 22nd, 1878, and his address is now given as 126, Above Bar, Southampton. (*b*) In the month of May, 1900, when the matter complained of occurred, Mr. G. T. O. Crocker was engaged in dental practice both in Manchester and Southampton. He had no qualified assistant in Southampton. (*c*) On May 22nd, 1900, a person named Rose Gannaway called at Mr. Crocker's surgery, and in his absence Mr. Crocker's wife looked at her teeth, gave her an estimate of the expense of what was required to be done, and made an appointment for Miss Gannaway to call on the following Friday, May 25th, 1900. (*d*) On May 25th, 1900, Miss Gannaway called pursuant to the appointment, on which occasion the wife of Mr. Crocker performed on Miss Gannaway a dental operation—namely, the removal of two stumps and the filling of two teeth. (*e*) It was not proved that Mr. Crocker had any knowledge of this operation performed by his wife on Miss Gannaway. (*f*) No evidence of any other case in which Mr. Crocker's wife actually performed dental operations as Mr. Crocker's assistant was adduced, but Mr. Crocker admitted that his wife had dressed teeth for him when he was busy. The evidence before the committee consisted of the following:—1. The oral evidence of the following persons: (*a*) Rose Gannaway; and (*b*) George Thomas Ockleford Crocker. 2. The following depositions and documents: (*a*) statutory declaration of Rose Gannaway dated June 1st, 1900; and (*b*) letters by George Thomas Ockleford Crocker dated June 19th and Nov. 4th, 1900.

Mr. Percy James Nicholls appeared with Mr. Crocker as his solicitor.

It was decided to hear parties rather than to proceed forthwith on the report from the Dental Committee.

Mr. NICHOLLS said that in these circumstances he did not know what the procedure could be, as the complainant, Mr. Crocker's brother, was not present.

Mr. TOMES, Mr. HORSLEY, Sir WILLIAM THOMSON, Dr. GLOVER, and Dr. MCVAIL wished for further information, and Mr. CROCKER went into the witness-box and answered several questions put to him by those members. Thereafter the case was considered *in camerâ*. On the readmission of the public

The PRESIDENT, addressing Mr. CROCKER, said: The Council has deliberated on your case and the Council acquits you.

The REGISTRAR read a report by the Dental Committee on the case of Mr. Alexander Wood Donaldson, dentist, Bury St. Edmunds, Suffolk. This report was as follows:—

The complaint against Alexander Wood Donaldson having been referred to the Dental Committee to ascertain the facts, the Dental Committee beg to report as follows. On Feb. 26th, 1901, the said Alexander Wood Donaldson did not attend personally, but Mr. Arthur Toovey, his solicitor, appeared for him and was duly heard. The committee find that the following facts were established by the evidence: (*a*) Alexander Wood Donaldson was registered in the Dentists' Register as in practice before July 22nd, 1878, and his address in the Dentists' Register is 56, Whiting-street, Bury St. Edmunds, Suffolk; (*b*) that being a registered dentist he advertised himself for many years with the description R.D.S., R.C.S. Eng., and subsequently with the description R.D.S. Eng.; and (*c*) Mr. Donaldson (by statutory declaration read by his solicitor) apologised for what he had done, stating that he erred through ignorance, that he had withdrawn all descriptive letters from his advertisement, and undertook not to use them in the future. The evidence before the committee consisted of the following documents—viz.: letters from the assistant secretary of the Royal College of Surgeons to Mr. Donaldson, dated Sept. 13th, 1899 (with copy advertisement inclosed), Oct. 23th, 1899, and Oct. 26th, 1899; letter from Mr. Donaldson to the Royal College of Surgeons, dated Oct. 25th, 1899; copy advertisement contained in the *Bury Free Press* of Oct. 13th, 1900; letter from Mr. Donaldson to the solicitor to the General Medical Council, dated Jan. 30th, 1901, with copy advertisement inclosed; and an affidavit of Mr. Donaldson, dated Feb. 25th, 1901.

Mr. TOOVEY appeared to represent the accused and presented a medical certificate showing that Mr. Donaldson was not in the a fit condition of health to travel to London.

After consideration of the circumstances the Council resolved that further consideration of the charge should be postponed until the November session, the PRESIDENT informing Mr. Toovey that the Council would expect Mr. Donaldson to appear then.

In the course of some conversation on the case it was suggested that "R.D.S." meant "Registered Dental Surgeon."

The Council and the English Royal Colleges.

The Council proceeded to the consideration of communications from the Royal College of Physicians of London and the Royal College of Surgeons of England declaring that these Colleges could no longer require the registration of students by the General Medical Council as a condition of admission to examination for their diplomas.

The PRESIDENT pointed out that the letter from the Royal College of Physicians was a communication forwarded on behalf of the President and Fellows of the College, whereas that from the Royal College of Surgeons was sent on behalf of the College.

Mr. BRYANT, in answer to Mr. HORSLEY'S inquiry as to whether the communication from the Royal College of Surgeons had been presented to the Fellows of the College, stated that the letter came from the Council who are the executive body which governs the College of Surgeons.

Dr. MCVAIL said that the new regulations of these Colleges seemed doubtful in respect to the length of the medical curriculum. He wanted to have it made quite clear if there was to be a five years' medical course subsequent to the passing of the preliminary examination in arts.

Dr. NORMAN MOORE: The medical study of a student must be study after he has passed his preliminary examination.

Dr. MCVAIL: Do the Royal Colleges recognise chemistry, physics, and biology as medical studies?

Dr. NORMAN MOORE: These subjects are included in the curriculum and are part of what is meant as medical study.

Dr. MCVAIL was not sure that the Colleges took that view, because they permitted the subjects in question to be taken before the passing of the preliminary examination and thus practically reduced the medical course of study from five to four years.

Dr. NORMAN MOORE said that the Royal College of Physicians had never intended so to reduce the curriculum.

Dr. MCVAIL hoped that it was so, and he would be delighted to have it made perfectly clear that the Colleges contemplated not a four years' medical course after the preliminary examination but in reality a six years' course where chemistry, physics, and biology were taken before the preliminary examination. He thought an investigation of the actual terms of the new regulations was very necessary.

Sir CHRISTOPHER NIXON thought the statement of Dr. Norman Moore had cleared up a great deal that was doubtful in this matter. From the statement it was quite clear that the Royal Colleges intended to retain the five years after the preliminary examination. In these circumstances, what did the whole dispute between the Council and the Colleges amount to? Simply this, that the Colleges recognised a larger number of scientific institutions than was recognised by the Council. That surely was a small matter to produce so much cleavage, and if it really was the question in dispute it surely could be settled by some amicable arrangement. It would be disastrous if there was to be a continuance of difference over such a matter. What he thought the Council would have to do was to find out what scientific institutions had the proper means of teaching the required subjects and recognise such institutions when found.

It was agreed to postpone further discussion till the next day and the Council adjourned.

FRIDAY, JUNE 7TH.

The Council resumed work to-day with Sir WILLIAM TURNER, the President, in the chair.

The President and the British Association.

The PRESIDENT said that with the consent of the Council he would leave the chair for about an hour in order to preside at a meeting of the Council of the British Association, and in accordance with custom he would ask the senior treasurer, Mr. Bryant, to take his place during his absence.

The proposal met with the approbation of the Council.

The Council and the English Royal Colleges.

The first business on the programme was the consideration of the communications from the English Royal Colleges with regard to the resolution adopted by the Council on Dec. 4th, 1900, viz.:—

That the Royal Colleges be informed that the Council, having taken into consideration the memorandum of the Colleges and the legal opinions relating thereto, has resolved to continue to adhere to its resolution with regard to the registration of medical students.

The communications as set out in the programme were as follows, viz. :—

(a) From the ROYAL COLLEGE OF PHYSICIANS.

London, S.W., May 14th, 1901.

SIR,—I am requested by the President and Fellows of this College to acquaint you, for the information of the General Medical Council, that in consequence of the adherence of the Council to their Regulation of June 7th, 1899, in reference to the registration of students, as announced in their resolution of Dec. 4th last, this College can no longer require the registration of students by the General Medical Council as a condition of admission to examination for its diplomas; and that, in accordance with the same decision on the part of the Royal College of Surgeons of England, the regulations for the qualifications of the two Colleges have been altered as in the inclosed copy.

I am, Sir, your obedient servant,
EDWD. LIVEING, Registrar.

To the Registrar of the General Medical Council.

(b) From the ROYAL COLLEGE OF SURGEONS OF ENGLAND.

Royal College of Surgeons of England, Lincoln's-inn-fields, London, W.C., May 13th, 1901.

SIR,—I am directed to inform you that, in consequence of the adherence of the General Medical Council to their Regulation of June 7th, 1899, in reference to the registration of students, as announced in their resolution of Dec. 4th last, this College can no longer require the registration of students by the General Medical Council as a condition of admission to examination for its diplomas, and that in accordance with this decision and with the same decision on the part of the Royal College of Physicians of London the regulations for the qualifications of the two Colleges have been altered as in the inclosed copy.

I am, Sir, your obedient servant,
S. FORREST COWELL, Secretary.

The Registrar, General Medical Council.

(c) REGULATIONS APPENDED.

SECTION I.

PROFESSIONAL EDUCATION.

I. Any candidate who desires to obtain the Licence of the Royal College of Physicians of London and the Diploma of Member of the Royal College of Surgeons of England is required to complete* five years of professional study after passing a recognised preliminary examination on the subjects of general education, to comply with the following regulations, and to pass the examinations hereinafter set forth. (See Section II.)

II. Every such candidate who shall commence professional study on or after the 1st of January, 1892, will be required to produce the following certificates before admission to the several examinations:—

First Examination.

1. Of having passed one of the preliminary examinations in general education recognised by the Examining Board in England, a list of which may be obtained on application.
2. Of having received instruction in the following subjects:—
   † (*a*) Chemistry and physics, and practical chemistry.
   ‡ (*b*) Practical pharmacy.
   † (*c*) Elementary biology.

SECTION II.

VI. A candidate will be admitted to examination in chemistry and physics and elementary biology on producing evidence of having complied with the regulations prescribed in Section I., Paragraph II., Clause 2 (*a*) and (*c*); and to examination in practical pharmacy on producing evidence of having complied with the regulations prescribed in Section I., Paragraph II., Clause 2 (*b*), *or he may take pharmacy at any time during the curriculum.*

XII. Candidates will be admissible to the second examination on the completion of two winter sessions and one summer session (or 15 months during the ordinary sessions) at a recognised medical school and after the lapse of not less than one year (one winter and one summer session) from the date of passing Parts I. and III. of the first examination, and on producing evidence of having complied with the regulations prescribed in Section I., Paragraph II., Clauses 3 and 4.

XVII. Candidates who have passed the second examination will be admissible to the third or final examination on production of the required certificates of study at the expiration of five years (five winter and five summer sessions) from the date of passing the preliminary examination and at the expiration of four years (four winter and four summer sessions) from the date of passing Parts I. and III. of the first examinations and of two years (two winter and two summer sessions) from the date of passing the second examination.

* The first of the five years may be spent at an institution, other than a medical school recognised by the Board, for instruction in chemistry, physics, practical chemistry, and biology, or six months may be spent in attendance at a similar institution in receiving instruction in chemistry, physics, and practical chemistry only. Four complete years of professional study must be attended at a recognised medical school and hospital after passing Parts I. and III. of the first professional examination.

† These subjects may be studied at institutions recognised for the purpose by the Examining Board in England, a list of which may be obtained on application.

‡ The instruction in practical pharmacy must be given by a registered medical practitioner, or by a member of the Pharmaceutical Society of Great Britain, or in a public hospital, infirmary, or dispensary.

Dr. MCVAIL asked for information about Part II.

Dr. NORMAN MOORE said that Part I. was chemistry, physics, and practical chemistry, Part II. pharmacy, and Part III. biology.

Dr. MCVAIL then pointed out that the regulations were not complete.

Dr. NORMAN MOORE said that the only regulations sent to the Council on this occasion were those in which alterations had been made, but of course the Council already possessed the regulations in their entirety.

Mr. HORSLEY thought the document in its present form was incomprehensible.

Dr. MACALISTER said that what appeared on the programme was precisely what had been sent to the Council by the Royal Colleges.

Dr. HERON WATSON submitted that the Council should not be asked to discuss this important matter until they had the whole state of the case before them.

Dr. NORMAN MOORE assured the Council that the Royal Colleges would be delighted to supply members with the complete regulations.

Dr. MACALISTER, seconded by Mr. YOUNG, moved that the communications be received and entered in the minutes and that notes be added explanatory of the references.

Dr. MCVAIL thought there should be a postponement.

Dr. HERON WATSON said that he wanted to pin the Royal Colleges down to what their regulations were.

The motion was put from the chair and accepted without a vote.

Dr. MCVAIL then moved that the consideration of the subject be adjourned until the members of the Council had obtained copies of the complete regulations.

Dr. NORMAN MOORE said that the Royal Colleges could not supply copies of the obsolete regulations, but they could and would supply copies of the regulations now in force. He objected to Dr. Heron Watson speaking about pinning the Royal Colleges down. All that had been done had been done openly, and he did not think it was an expression which should be used about any qualifying body.

Dr. GLOVER protested against this waste of time.

Dr. HERON WATSON seconded the motion for the adjournment.

On the vote being taken 12 members voted for the motion, 10 against it, and 9 abstained from voting.

The consideration of the communications was accordingly adjourned.

Annual Report of the Finance Committee.

The Council then dealt with the report by the Finance Committee on the income and expenditure for 1900. The report stated that the income of the General and Branch Councils for the year ending Dec. 31st, 1900, was £8657 8*s.* 7*d.* and the expenditure for the same period £9694 19*s.* 8*d.* Consequently there was a deficit on the year's working of £1037 11*s.* 1*d.* The receipts from fees were practically the same as in 1899, England having received £140 15*s.* less, Scotland £77 13*s.* more, and Ireland £73 17*s.* 6*d.* more, the net total increase being £10 15*s.* 6*d.* The actual law expenses in 1899 were £612 2*s.* 6*d.* and in 1900 they were £557 1*s.* 5*d.*, a decrease of £55 1*s.* 1*d.* During the last seven years, the Pharmacopœia being excluded, the expenditure had exceeded the income on an average by £1044 1*s.* 1*d.* The total sum expended on the alteration of the Council's buildings had been £3263 19*s.* 6*d.* The expenditure on the acquisition of the property and its subsequent alterations amounted to £25,770 19*s.* 6*d.*, against which the English Branch Council held a mortgage of £25,500 at 3 per cent., leaving an unsecured debt of £270 19*s.* 6*d.*, which it was proposed to secure by a further endorsement on the mortgage deed. With regard to the Irish Branch Council, its receipts from fees were £886 and its expenditure was £1199 18*s.* 8*d.*, leaving a deficit on the year's working of £313 11*s.* 2*d.* The Council made a grant of £500 to its funds, and a balance was brought forward from 1899 of £62 6*s.* 2*d.*, so that the cash in hand at the end of the year amounted to £248 15*s.* Supposing that the income for 1901 was the same as that for 1900—viz., £886—by adding it to the balance in hand they got a total of £1132. The expenditure for 1900 was £1200, and the committee, in view of the fact that the expenditure would probably be rather higher this year on account of the cost of the election of a Direct Representative, recommended that a further grant of £500 be made to the Irish branch. As to dental finance, the receipts were £992 4*s.* 5*d.* and the expenditure amounted to £735 14*s.*, leaving a surplus of £256 9*s.* 7*d.* on the year's working.

Mr. BRYANT, chairman of the committee, moved that the report be received, entered on the minutes, and adopted. He pointed out that the expenditure included such items as the grant of £500 to the Irish Branch Fund, which was received back, and the contribution of £215 to the Sinking Fund, a fund which was a gradually increasing asset of the Council. The receipts and expenditure in connexion with the

Pharmacopœia were now kept in a separate account. This account showed a deficit on the year of £288 8*s.* 7*d.*, but he was told that there was at present about £290 in the hands of the printer, so that there was really no deficit.

Dr. PETTIGREW seconded the motion.

The motion was adopted by the Council.

The Finances of the Council.

Mr. BRYANT said that he had a report to hand in on the finances of the Council, prepared by Mr. E. R. Frere, the professional accountant selected by the treasurers in accordance with the resolution of the Council of Dec. 5th, 1900. He had three points to put before the Council, whether they should discuss the report *in camerâ*, whether they should have a shorthand writer to take a full report of what was said, or whether each member of the council should be asked to send in to the Finance Committee any suggestion he wished to make with reference to the subject of the report.

Mr. HORSLEY said that as this was the expenditure of public money he thought it should be discussed in public.

The PRESIDENT: Do I understand that no one suggests that this matter should be discussed *in camerâ*?

Dr. PYE-SMITH: Yes, many of us.

Dr. BENNETT: I move that it be discussed *in camerâ*.

Dr. PYE-SMITH: I second.

Mr. HORSLEY said that he hoped the Council would not accept the motion, for he held strongly the opinion that the matter should be discussed publicly.

On a vote being taken 14 members voted for the motion, 13 against it, and four abstained from voting either way.

The Council accordingly went into *camerâ* for the consideration of Mr. Frere's report.

In this report Mr. Frere deals with the subject referred to him under several headings. Under the heading of "The Relation of the Income and Expenditure of the Council and its Branches for the last Ten Years" he says:—

One of the chief difficulties in the situation is Section XIII. of the Act of 1858, which is as follows:—

XIII.—All moneys payable to the respective councils shall be paid to the treasurers of such councils respectively and shall be applied to defray the expenses of carrying this Act into execution in manner following; that is to say, separate accounts shall be kept of the expenses of the General Council and of those of the branch councils, and the expenses of the General Council, including those of keeping, printing, and publishing the Register for the United Kingdom shall be defrayed, under the direction of the General Council, by means of an equal percentage rate upon all moneys received by the several branch councils; returns shall be made by the treasurers of the respective branch councils at such times as the General Council shall direct of all moneys received by them, and the necessary percentage having been computed by the General Council the respective contributions shall be paid by the treasurers of such branch councils to the treasurer or treasurers of the General Council, and the expenses of the branch councils shall be defrayed, under the direction of those councils respectively, out of the residue of the moneys so received as aforesaid.

When the Act of 1858 was drawn there were doubtless good reasons for the form in which this section was inserted. It was contemplated that the branch councils would be able to pay their way and have an annual balance out of which to contribute the equal percentage rate, as it is to be presumed that the "residue" mentioned was calculated to be sufficient to enable the branch councils to exist. Owing, however, to the heavy annual demands of the General Council, especially of late years, it has been found that the branch councils have in some years been obliged to realise portions of their invested funds in order to meet their own office expenses. In the case of the Irish branch the reserve is exhausted.

The following is a quotation from the report of the Special Finance Committee: "The fact, however, remains that the branch can only carry on its statutory duties this year by the aid of the special grant of £500 made to it by the Council. This will have to come, as part of the Council's expenditure, out of the funds of all the branches, including the Irish branch, so that the net gain to the Irish branch will be only about £100 (since the General Council requires about 80 per cent. of the gross receipts of each branch). This is doubtless a very cumbersome procedure, but in view of the provisions of Section XIII. of the Medical Act, 1858, it is the only course which the statute allows."

Inasmuch as under Section XIII. the General Council have absolute power over the administration of the funds, it would seem that, for the purpose of considering this point, the "independence theory" should be disregarded, and the Council and its branches looked upon as one body.

For the 10 years under review, 1890 to 1899, the total deficit, as shown by the report of the Special Finance Committee (including the Pharmacopœia), amounted to about £1100—or an average deficit of £110 per annum.

This statement, however, is not a reliable guide when we come to consider the future.

Dealing with the same period, but excluding the Pharmacopœia, which is in future to be kept separate, it will be found that the first three years show an average annual surplus of upwards of £1140; the last three years show an average annual deficit of upwards of £1830; the actual deficit for the year 1900 being £1057 11*s.* 1*d.*

From this it is apparent that the surplus saved by the branch councils in former years is gradually diminishing, a state of affairs which should not be allowed to exist, and which calls for earnest consideration and prompt action on the part of the Council.

Under the heading of "The Measures that Appear to be Desirable to place the Council's Finances on a Satisfactory Basis" Mr. Frere says:—

The simplest solution of the difficulty and, so far as I can see, the only means by which the Council can carry out its duties under the existing Act, without further reducing the surplus funds of the branches, lies in a very considerable reduction of the fees and expenses paid to the individual members of Council. The following are my recommendations: 1. That the fees for attendance be reduced from £5 5*s.* to £3 3*s.* 2. That the additional fees for days of travelling be abolished. 3. That instead of the present travelling allowances members should be recouped their actual disbursements under this head. 4. That steps should be taken to shorten as far as possible the sessional business. 5. It might be arranged that, except in special cases, the work of the committees should be done without fee.

I beg to add that I do not consider the present fee of £5 5*s.* to be excessive considering the length of absence from ordinary duties which the meetings involve. If these recommendations were carried out I estimate that there would be a saving in the expenditure of upwards of £1400. Unless measures such as the foregoing are adopted the only alternative is to materially increase the income, and the only possible way of doing this would appear to be by means of further legislation.

An Opinion as to whether Invested Funds are to be considered as Capital to be held intact.

When the Act came into force it would have been good policy to have capitalised all the retrospective fees and have treated the fund thus created as pure capital to be held intact. As the Act stands, however, all registration fees are clearly income and the present invested funds are accumulations of income.

As to the Method of Accounting.

I understand that some Members of the Council are of opinion that the form in which the accounts are issued is capable of improvement, and I have been requested to redraw those for 1900 with the object of showing clearly the result of each year's work and the financial position from year to year. The accounts appear to me to have been prepared with great care and in full detail. It is of course necessary from the treasurer's point of view that accounts containing this full detail should be prepared and filed, but as any difficulty there may be in following them probably arises from the publication of an excess of detail I have redrawn the accounts for 1900 in the form I should suggest for publication.

As to the Relations between the General Council and the Branch Councils under a New Act.

It appears to me from an ordinary business point of view that the relation between the General Council and the Branch Councils requires readjusting. When the Act of 1858 was drawn the present conditions were not foreseen, and no mention is made as to the accumulation of a surplus by the branches. I have already referred to the grant to the Irish Branch Council which, briefly stated, means that the Council have been obliged to assist the Irish branch at the expense of the English and Scottish branches. Again, assuming that the General Council have the right to provide themselves with some £25,000 worth of assets, by gradually appropriating this sum out of the surpluses of the English and Scottish branch councils (which is what is being done by the operation of the Sinking Fund) it follows that the General Council have the right to deal at once with all the present funds in any way they please for the purpose of carrying out the Act.

In a new section, substituted for Section XIII., the General Council as the supreme authority should be placed in the position of receiving the whole of the fees and of having control over the expenditure of its branches—administering them, in fact, as what they really are—branch councils of the General Council. I assume that it is necessary to retain the branch councils; to the layman it would appear that the work could be done quite as effectually and at a greatly reduced expense by one central office. I think that in the new Act it would be desirable to obtain power to charge a small annual fee for future registrations, which would materially increase the funds and eventually enable the General Council to reduce the present registration fee. The office expenses would of course be somewhat increased, but this would not be felt in the large increase in the funds, and, in addition to other advantages, the general body of practitioners would, I should imagine, be brought more into touch with the Council.

When strangers were re-admitted no statement was made as to what had taken place *in camerâ*.

The Pharmacopœia.

Dr. MACALISTER presented the following report from the Pharmacopœia Committee:—

The committee have to report that 30,474 copies of the British Pharmacopœia, 1898, have been disposed of, the stock remaining at the printers on May 31st being 569 copies. As 804 copies have already been sold during the present year the stock will probably be exhausted before the Council meets in November. The committee therefore recommend that the President be authorised to order a fresh issue of 1500 copies. This issue will afford an opportunity of inserting a slip of corrigenda dealing with two or three minor errors which have been discovered in the text. The Indian and Colonial Addendum, 1900, was duly published at the end of last December. Copies were furnished through the Privy Council to the India Office and the Colonial Office for communication to the several administrations, and official intimation of its issue as a supplement to the British Pharmacopœia, 1898, has been conveyed to the Governments concerned. Up to the end of May 281 copies of the Addendum had been sold.

The collection of books relating to pharmacy and the Pharmacopœia has been arranged and catalogued under the supervision of Dr. Payne, to whom for this service and for the valuable additions he has himself made to the library the committee are much indebted. The committee also desire to express their thanks for welcome gifts of books from several other donors. Through the kindness of various pharmaceutical authorities in India and some of the colonies a large number of excellent specimens of crude drugs and preparations relating to the Addendum have been added to the collection of *materia medica* in the committee's

room. At the invitation of the committee two important series of investigations have been undertaken, under the direction of Professor Greenish, in the research laboratories of the Pharmaceutical Society of Great Britain. The results have in part been published in the *Journal* of the society under the titles of "The Percentage Ash of Crude Drugs and their Powders" and "Determination of the Accuracy or Otherwise of the Solubilities given in the British Pharmacopœia." The researches when complete will be of great value in relation to the next revision of the Pharmacopœia. Other investigations undertaken at the instance of the committee in accordance with suggestions made at its conference with the representatives of the pharmaceutical societies are in progress, and the results will in due time be made public.

Dr. BRUCE asked for information as to how far the question of copyright came in and what steps had been taken to secure the copyright.

Dr. MACALISTER replied that the Executive Committee, to whom the matter had been remitted, had been active on the subject during the interval between this and last session, and so far as this country was concerned there was not the slightest doubt that the General Medical Council had the exclusive right of publication. There were good grounds for believing that the Act which applied to the United Kingdom was an Act of Imperial extent and applied to the colonies and India.

The report was received and entered on the minutes.

The Standard of Preliminary Examinations.

Dr. MACALISTER, on behalf of Sir John Batty Tuke, submitted a report of the Education Committee on the steps taken for raising the standard of preliminary examinations. This stated:—

The Education Committee, in pursuance of the authority given them by the Council "to take all needful steps to give effect to the recommendations and suggestions for the improvement of preliminary examinations," have, since the last meeting of the Council, continued their negotiations with the various examining bodies and have, in the case of several of these, arrived at highly satisfactory results. With the valuable assistance of Professor McCormick, who has, in association with members of the committee, held conferences with various bodies in different parts of the country, they have come to an understanding with the authorities of Oxford, Cambridge, and Durham as to the enhanced requirements which, after Jan. 1, 1902, will be enforced in respect of their respective examinations. The committee recognise with satisfaction the readiness with which the authorities of Oxford and Cambridge have met their wishes, and realise that the new conditions mark a considerable advance in the standard of attainments required of candidates who seek to qualify for the Students' Register by means of their local examinations. The improvements to be made in the Durham certificate of proficiency examination are important, and may, for the present, be accepted as fulfilling the minimum requirements of the Council. But the committee are not satisfied that they bring the examination fully up to the level of the other University examinations in their revised form, and they hope that ere long a further advance will be made by the Senate of the University of Durham.

The junior local examinations of the University of Edinburgh and the University of Aberdeen and the preliminary examination of the Victoria University will, with the assent of these Universities, cease to be included in the list of recognised examinations on Jan. 1st, 1902.

The College of Preceptors, the Royal Colleges of Physicians and Surgeons in Ireland, and the Educational Institute of Scotland have submitted proposals for new examinations intended to meet the increased requirements of the Council. The details of these examinations are still under the consideration of the committee. It is recognised that a genuine effort is being made to bring them up to the required standard, but as fuller information on certain points is still desired, and as it is important that the three non-university examinations should be dealt with together and as nearly as may be on uniform principles, the committee have not yet been able to come to a final determination in regard to them. The committee hope that during the summer they may, by means of further conference and communication, arrive at a satisfactory arrangement with each of these bodies, whose willingness to coöperate with them they cordially acknowledge. The list of examinations in the United Kingdom which are recognised as meeting the requirements of the Council will be finally adjusted by the committee and submitted at the November session of the Council.

A communication has been referred to the committee in which it is urged on behalf of particular Indian students that the entrance or matriculation examinations of certain of the Indian universities should be replaced in the Council's list. These examinations the Council in 1893, on the advice of the committee, decided to remove. The grounds of the decision were twofold: (1) that the examinations in themselves come short of the standard desired by the Council; and (2) that the universities by which they were conducted did not regard them as a sufficient qualification in arts for their own medical students, who were required in addition thereto to pass a higher examination in the same or similar subjects. These grounds still exist and the Council's list accordingly in each case includes only the higher or qualifying examination in arts required as a minimum by the university itself. The committee are of opinion that it is not expedient to accept, on the part of Indian university students who take part of their course in this country, a lower standard of general education than that which is enforced by the medical faculties of their own provinces.

Dr. MACALISTER remarked that this report was an interim one and needed no comment. He moved that it be received and entered on the minutes.

Dr. REID seconded and the motion was agreed to.

Dental Education and Examination.

Mr. TOMES, for Mr. BRYANT, who was temporarily in the chair, presented the following report by the Dental Education and Examination Committee:—

An application has been received from the University of Birmingham for the recognition of its degrees in dentistry and has been referred to your committee by the Executive Committee. The University does not grant its degree in dentistry to any candidate who has not at least 12 months previously obtained a licence in dental surgery from some body legally entitled to confer such qualifications; it requires from such additional study and the passing of additional examinations, so that the degree is of the nature of a higher qualification and its recognition by the Council is governed by sub-section 6 of Clause 11 of the Dentists Act.

In this clause the Council is empowered to register or to remove from the Register "any additional diplomas, memberships, degrees, licences or letters held by a person registered therein, which appear to the Council to be granted after examination by any of the medical authorities in respect to higher degree of knowledge than is required to obtain a certificate of fitness under this Act." In addition to the production of his licence in dental surgery the candidate is required to produce evidence that he has attended the same courses and passed the same examinations as are required for the medical and surgical degrees of the university in the following subjects: chemistry and practical chemistry, physics and practical physics, biology, anatomy and practical anatomy, physiology and practical physiology. He is also required to have attended one course of lectures on medicine, one course on surgery, special courses on the surgery and medicine of the mouth, and pathology and bacteriology. Some of these courses will doubtless have been attended by the candidate in his curriculum for the Dental Licence, but the requirements of the Birmingham University are of greater stringency in that in all subjects of the first group he has to do all that is required of the medical student both in attendance and in examinations, and in that in those of the second group he has to pass special examinations instituted for this dental degree. The final examination is conducted by the lecturers on the respective subjects in conjunction with an external examiner. Without entering into further detail it is clear that the degree of Bachelor of Dental Surgery is intended to be, and in effect will be, a "higher qualification" in the sense of the clause in the Dentists Act referred to above. The degree of Master of Dental Surgery will be granted after not less than 12 months' interval upon the presentation of a thesis to be approved by examiners nominated for that purpose, and will be awarded or withheld according to their report. A technical difficulty exists in making any order at the present moment, inasmuch as, although an examination has been fixed for the latter part of this month, no examination has as yet been held.

An application from Mr. B. C. Marriott Watson, a registered dentist in the Colony of Victoria, for registration as a colonial dentist has been referred to your committee by the Executive Committee. In the year 1898 two gentlemen holding qualifications of the Colony of Victoria were admitted to registration, but some questions subsequently arose with regard to the conditions under which their diplomas were conferred, these conditions having undergone several changes during the last few years. In the year 1900 another gentleman was registered in the Colonial List as registered in Victoria, but in this case also there were special circumstances which had to be taken into consideration, and none of these three registrations can be taken as affording any binding precedent.

In 1900 new and revised regulations of the Colony of Victoria were submitted to the General Medical Council and were referred to the Dental Education and Examination Committee and reported upon (Appendix, vol. xxxvii). It having been considered that the amended curriculum then submitted was not the full equivalent of our own the Council resolved (minutes, vol. xxxvii., p. 67): "That the Council is unable to recognise the diploma of the Dental Board of Victoria as entitling its holder to registration in the Dentists' Register of this country." The present application, which is accompanied by testimonials as to character, is for registration of a diploma conferred in 1890 in virtue of the candidate having passed the "Modified Examination" of the Dental Board of Victoria, and having been thereupon registered in Victoria in 1890. This "Modified Examination" your committee believe to have been one applicable to persons who had been for a certain length of time in practice. Under these circumstances we cannot recommend the Council to order the Registrar to place the name of this gentleman on the Register.

This report was received and entered on the minutes, and, on the motion of Dr. MACALISTER, seconded by Mr. TOMES, it was resolved not to accede to the application of Mr. Marriott Watson for registration as a colonial dentist.

The REGISTRAR read a report from the Executive Committee on the dental business transacted since the last session of the Council who stated:—

The prescribed conditions having been duly fulfilled, the names of the under-mentioned persons have been restored to the Dentists' Register, from which they had been erased in conformity with the provisions in Section 12 of the Dentists Act (1878):—David Anthony, Christopher F. Badcock, Luther Bidlake, James N. Dunlop, Alfred C. Faulkner, Philip J. Harrington, George N. Lindup, W. Gerard Morgan, Edwin Robertshaw, and Stanley R. Wakefield.

The committee has received an application for registration as a foreign dentist from a dentist holding a Brazilian diploma in dentistry granted after examination by the medical faculty of Rio de Janeiro in 1883. The application was not acceded to.

The report was received and entered on the minutes.

Prevention of Personation.

The Council went into committee to further consider a report from the special committee on the subject of prevention of personation.

Mr. HORSLEY mentioned that last session the Council had adopted the committee's first recommendation in the form following:—

That in all cases where application is made for registration on the Medical or Dental Registers under exceptional circumstances the facts of the case shall be furnished in the form of a statutory declaration.

On Recommendation No. 2 it was questioned by Sir CHRISTOPHER NIXON whether the Medical Act required that the applicant should fill up the form of application in his own handwriting.

Dr. MACALISTER asked if Recommendation No. 1 had been adopted by the Council.

Mr. HORSLEY replied that his recollection was that it was. Otherwise how could they have got to the second recommendation which now stood for consideration?

Dr. MACALISTER thought they had discussed Recommendation No. 1 and that before they came to a vote upon it the discussion had been adjourned.

Mr. HORSLEY did not agree. How could they have got to No. 2 unless they had passed No. 1?

Mr. BRYANT: There is no record of our having passed No. 1 and I rule that we begin again.

Mr. HORSLEY: Then I move the adoption of No. 1.

Mr. BROWN: If we go on to discuss this report would it not be better to have the recommendations entered on the minutes?

Mr. HORSLEY: They are already on the minutes.

Mr. BRYANT: Go on, Mr. Horsley.

Mr. HORSLEY: My recollection is that Recommendation No. 1 was discussed and agreed to by the Council and therefore I now simply move its adoption.

Dr. BRUCE seconded.

Dr. NORMAN MOORE thought that the Recommendation was going quite beyond the common usage of the universities and other licensing bodies who had to deal with such matters. It was quite uncommon for a fraud to be committed and he thought it was hardly desirable that they should introduce such a tone into their proceedings.

Mr. TOMES: The answer to that is that there have been cases of fraud.

After further conversation and reference to last session's minutes it was discovered that Recommendation No. 1 had not only passed through committee but subsequently had been reported to the Council and then actually adopted.

Mr. HORSLEY thereupon proposed the adoption of Recommendation No. 2 which was in the following terms:—

With the view to identification of all applicants for registration such forms of application shall be filled up in the handwriting of the applicant, and in all cases for restoration to the Register the applicant shall furnish in addition a statutory declaration of the facts of his case as well as a certificate of identity.

Dr. MACALISTER questioned whether it was within the powers of the Council to pass such a proposal as the Act of 1858 provided for the registration of persons *en bloc*, and any individual whose name had been sent up to the registrar by one of the licensing bodies might come and claim registration because of that alone. If any person did so he did not see how the Council or Registrar could resist.

Mr. HORSLEY pointed out that under Section 14 of the Act of 1858 the General Medical Council was authorised to make such regulations as they thought fit, and it was this section which their solicitor thought governed the situation.

Dr. MACALISTER: Of course, the Council is entitled to make any by-laws it chooses unless they are contrary to the Act of Parliament.

Mr. TOMES regarded the recommendation as one that was not without importance, for there had been an actual case of personation which had come to light simply through investigation of the handwriting on the application form.

On the suggestion of Dr. NORMAN MOORE, Mr. HORSLEY put the recommendation into this form:—

With the view to identification of applicants for registration on the Students' Register the form of application shall be filled up in the handwriting of the applicants.

The committee adopted this, and on the Council resuming Dr. MACALISTER reported their action.

For the remainder of the sitting the Council sat *in camerâ* considering Mr. FRERE'S report on the finances of the Council.

SATURDAY, JUNE 8TH.

The Council resumed to-day, Sir WILLIAM TURNER, the President, being in the chair.

The Finances of the Council.

In the minutes of the previous day's sitting with regard to the proceedings *in camerâ* an amendment was made to make it clear that the Council considered the report of the Special Finance Committee as well as Mr. Frere's report.

Mr. HORSLEY, after the minutes had been approved, moved that the representatives of the press be permitted to refer to the shorhand notes of the proceedings *in camerâ*. He thought that the Council went into *camerâ* under a misapprehension of the facts, for the Council simply reopened the discussion of last year on the report of the Special Finance Committee, a discussion which took place then in public. They were therefore in the curious position of having done one-half of their discussion on this subject in public and the other half in private. He of course had objected to their going into *camerâ* on the general ground that they were dealing with the expenditure of public money; a majority of one thought otherwise and therefore they went into *camerâ*. Now he wished to suggest that nothing arose *in camerâ* that ought not to be published, and inasmuch as they had placed Mr. Frere's report upon their public minutes it seemed to him rather ridiculous and anomalous not to have an account of the discussion. He thought, therefore, that the representatives of the press should have access to the notes of the shorthand writer who was present.

Dr. ATTHILL seconded the motion, saying that when he voted against the proceedings being public he did so under a misapprehension. He thought that they were going into details, whereas the discussion was one which ought to have been public.

The PRESIDENT asked Mr. Horsley how he proposed to give effect to his motion.

Mr. HORSLEY said that the shorthand notes would be transcribed and the transcript would be a document of the Council and he proposed that the representatives of the press should have access to it.

The PRESIDENT: That is quite a new procedure.

Mr. HORSLEY: I am quite aware of that and that is the reason why I brought it forward in this way.

Dr. GLOVER said that he sympathised with Mr. Horsley and thought they should go further than he proposed and publish the report like any other document of the Council.

Dr. MACALISTER thought that the proposal was not quite fair to those members who spoke while they were *in camerâ* and knew that they were speaking *in camerâ*; it was going behind their backs, in a sense. If members had known that the report of their remarks was going to be published they might very well have taken different lines. He did not think that without notice and after the fact anything of this kind should be done.

Dr. BRUCE said that he thought this motion would set a bad precedent. He had no doubt that some of them did speak well knowing that they were speaking *in camerâ*.

Dr. PYE-SMITH said that he did not vote for going into *camerâ* under any misapprehension. He took no part in the discussion and therefore it was indifferent to him in that sense whether or not the report was published, but in his opinion it would be wrong to publish the report.

Mr. HORSLEY said that he should like to reply to Dr. MacAlister's observation that something was being done behind somebody's back. He could not conceive anything being more open than his motion.

On a vote being taken nine voted for the motion and 16 against it, five members declining to vote and one member being absent.

The motion was accordingly rejected.

The Case of Dr. Henry Ward Irvine.

The Council then took up the adjourned consideration of the case of Dr. Henry Ward Irvine, against whom on Nov. 29th, 1900, the following charge was found proved, viz.:—

That he accepted the office of consulting physician to the Consultative Medical and Surgical Institution, Birmingham, at a salary, and approved or acquiesced in the extensive advertisements issued by that institution by posters exhibited in the various manufactories, trading establishments, and mercantile offices of the city, by advertisements in the daily press, and by lithographed letters and printed pamphlets, widely circulated, setting forth conspicuously his name and medical qualifications, and referring to his special ability as a general consulting practitioner, and soliciting and inviting the public to consult him at a reduced fee.

Dr. Irvine attended, together with Dr. Hugh Woods, secretary of the London and Counties Medical Protection

Society, while the complainant in the case was represented by Dr. Bateman of the Medical Defence Union.

Mr. WINTERBOTHAM, solicitor to the Council, read the terms of the charge and stated that on Nov. 29th, 1900, at the conclusion of the deliberation of the Council on the case, the President informed Dr. Irvine that the charge which he had been required to answer had been proved to the satisfaction of the Council; that the further consideration of the charge proved against him had been adjourned until the May session; that the Council regarded the conduct complained of as being of a serious character; and that in adjourning the case it gave him an opportunity to reconsider his position.

Dr. IRVINE, addressing the Council, said that he would like to refer to a letter addressed to the Registrar of the Council by his solicitors two days after the inquiry of the Council. The letter was in these terms, viz. :—

1st December, 1900.

DEAR SIR,—We need hardly say that the decision at which your Council arrived on the 29th November was entirely unexpected by us and our client, and that the generality of their direction—viz., that he should reconsider his position before the next session of your Council in May next—places him in a position of serious difficulty. We have to-day discussed the matter with him with a view of carrying out the Council's direction. In so doing we have carefully considered the charge which the Council has held to have been established and recalled, so far as we are able, the points which (from the questions asked) appear to have influenced the minds of the members of the Council; and we will proceed to deal with them in the following paragraphs. 1. It was suggested that the pamphlets which have been sent out (certainly without Dr. Irvine's approval) contained observations reflecting on the general practitioner and magnifying Dr. Irvine's skill and abilities. While admitting as he did that some paragraphs would bear such construction, he desires again to emphasise that he was not in any sense responsible for the circulation, much less for the preparation, of the pamphlets and at his request the Institution will not issue any more of these pamphlets and will so far as possible withdraw those already issued. 2. As to the circulation of the posters, we infer from certain questions asked that although these posters were honestly intended to be mere announcements of the inauguration of the new movement, their retention even by members of the Hospital Saturday Fund may be thought to be continued advertisement. In order to meet this objection the Institution have, again at Dr. Irvine's request, agreed to withdraw all those posters. 3. Criticism was directed to the title by which Dr. Irvine is described by the Institution in the above-mentioned pamphlets and posters. As, however, the Institution has agreed to withdraw these this objection is now removed. 4. We do not recollect that any objection was raised to the terms of the Institution's first report, but we are authorised to say that no further copies will be circulated. We think we have now (so far as the material at our disposal enables us) dealt with the points raised at the hearing but (confirming the evidence of Mr. Chamberlain) we are authorised by Dr. Irvine and the representatives of the Institution to say that he and they will carefully consider any suggestions which your Council may desire to make in relation to the duties discharged by their medical man. We write without delay, as we understand your Council remains in session only until Wednesday next and will not meet again until May.

Yours faithfully,

PINSENT AND COY.

The reply of the Council's solicitor to this letter was that the Council could not reopen the matter at that session; that the matter must stand adjourned. However, the committee of the Institution at once proceeded to carry into effect the offer made in the letter by sending round a man to all the firms which had received copies of these announcements, in order to collect all copies then existing. He might say that he was personally satisfied that the committee had carried out their promise in the most thorough and painstaking fashion. They sent round a second man in order to see that none of the announcements had been missed by the first man. In further considering his position he took the advice of the London and Counties Medical Protection Society, and he announced his resignation of his appointment in Birmingham to the Registrar of the Council in an informal way on March 4th and again during the month of April.

Dr. BATEMAN said that he had one or two questions which he should like to address to Dr. Irvine. He should like to ask him whether he would be surprised to learn that two of the pamphlets put in in evidence against him were still being issued by the Birmingham Hospital Saturday Fund.

Dr. IRVINE replied that he should be very much surprised.

Dr. BATEMAN asked whether he would be surprised to hear that his name-plate was still on the door of the Institution.

Dr. IRVINE said that he had ascertained that this was the case and had telegraphed to have the name-plate removed.

Dr. BATEMAN asked Dr. Irvine when he resigned the appointment.

Dr. IRVINE replied that it was on Feb. 21st. In answer to the President Dr. Irvine said that he no longer lived in Birmingham.

Sir WILLIAM GAIRDNER: Am I to understand that Dr. Irvine quite understood all the time that the gravamen of the charge was the objectionable advertisements and not the reduced fee?

Dr. IRVINE: I am glad to hear that that was the gravamen of the charge; that was my impression.

Dr. HUGH WOODS went into the witness-box and explained what had passed between Dr. Irvine and the London and Counties Medical Protection Society. Generally speaking, he said that Dr. Irvine had accepted the advice of the society and that advice had been to respect the wishes of the Council. Among other things the society advised him to sever his connexion with the Birmingham Institution. The society did not know whether the Council would consider it an offence to accept a salary from such an institution, but they understood the ground of objection chiefly to be the advertising. Dr. Irvine had severed his connexion with the Institution, had left Birmingham, and short of committing suicide he did not know anything more that he could have done than he had done. There was a quite definite intimation of intention to withdraw from the appointment on March 4th.

Dr. BATEMAN said that he only brought up the questions about the name-plate and the pamphlets so as to give Dr. Irvine an opportunity of repudiating what had been done.

The Council deliberated in private, after which the PRESIDENT announced to Dr. Irvine that they had resolved to proceed no further in regard to the charge.

Dr. IRVINE thanked the Council for their decision and the care with which they had gone into the case.

The Council and the English Royal Colleges.

The Council then proceeded to the consideration of the communications from the Royal College of Physicians of London and the Royal College of Surgeons of England with regard to the registration of medical students. In these communications the Royal Colleges announced that they could no longer require a registration of students by the Council as a condition of admission to examination for their diplomas, and presented certain of their regulations.

Dr. MCVAIL thanked Dr. Norman Moore for having furnished to members of the Council copies of the complete regulations of the Conjoint Board of the Royal Colleges. These regulations he proceeded to criticise. He said that they left the student free to go to schools some of which had not even been visited by representatives of the Royal Colleges. He objected to many of the institutions at which study was permitted.

Dr. NORMAN MOORE: Name.

Dr. MCVAIL: The list is as long as my arm, but to a large extent they are ordinary board schools.

Dr. NORMAN MOORE: General assertions of this kind ought not to be allowed and I call upon Dr. McVail to mention specific schools.

The PRESIDENT: I am given to understand that a committee of the Conjoint Board has revised the list of schools that was submitted to this Council about a year ago and that the list has been greatly diminished. So I am told, but I have not seen the new list.

Mr. HORSLEY: Might we have a copy of that list?

Dr. MCVAIL said that the indignation of Dr. Norman Moore was extremely interesting when they remembered that at the last meeting at which this subject was discussed the representatives of the Conjoint Board admitted that a number of the schools on the list had not been inspected at all.

Mr. BRYANT said that they admitted that a few of them had not been inspected and the number was diminishing.

Dr. NORMAN MOORE said that when these schools first came to be recognised they were not recognised as a part of medical study at all. At the time it was thought that the careful inspection which was carried out by the Science and Art Department at South Kensington was sufficient. After the inquiry into the South Kensington system the Royal Colleges proceeded to visit the schools for themselves. They took enormous pains and it was impossible to visit all the schools at once. They proceeded upon certain definite principles and to suggest that the Royal Colleges had been careless or neglectful was entirely unjust.

Dr. MCVAIL said that in the University Court of Glasgow, of which he was a member, they did not recognise a list

wholesale and say that at their leisure they would make inquiries. The teachers and lecturers were all inquired about before they were recognised.

Dr. NORMAN MOORE said that that was exactly the case with the Royal Colleges.

Dr. MCVAIL said that he understood that the Royal Colleges first made out a list of recognised schools and inspected them afterwards.

Dr. NORMAN MOORE pointed out that the Royal Colleges first ascertained that the school had been recognised by the authorities at South Kensington. They accepted that recognition as, he maintained, they were justified in doing in the first instance.

The PRESIDENT asked Dr. McVail whether he intended to make a motion.

Dr. MCVAIL replied that he would move:—

That the communications from the Royal College of Physicians of London and the Royal College of Surgeons of England, in so far as these relate to the courses of study accepted by them in the subjects of their first professional examinations, do not afford evidence that these courses of study are in all cases sufficient.

He did not know yet, he said, whether the Conjoint Board had actually inspected every one of the schools or colleges other than recognised medical schools from which they received certificates of attendance. Unquestionably they had not done so six months ago. In Scotland they did not recognise any institution until it had been inspected and everything about it considered. He put his motion because the Royal Colleges laid down no definite instructions as to the length of the curriculum and because they accepted teaching from certain institutions about which this Council had no knowledge as to whether they were suitably equipped for the teaching.

Dr. HERON WATSON seconded the motion.

Mr. HORSLEY asked if the representatives of the Royal Colleges would furnish the Council with a genuine list of the institutions which they recognised.

Dr. NORMAN MOORE said that he would furnish nothing in reply to any request so phrased. The word "genuine" was not to be used in this connexion. The Royal Colleges furnished every information asked for. Subjects of this kind were under constant consideration and discussion and every document furnished to the Council was genuine. He supposed that what Mr. Horsley meant was the latest list—the list up to the last date on which the subject was discussed.

The PRESIDENT: Then I understand that since the list was given in six months ago there has been reconsideration of it, and consequently the institutions named in that list are not quite the same as they were six or 12 months ago?

Dr. NORMAN MOORE: That is so.

Mr. HORSLEY: Might I ask for the date of that list.

The REGISTRAR: January 31st.

Mr. HORSLEY: Might I ask for a copy of that list. It might help us.

Dr. NORMAN MOORE: If I had supposed that this particular subject was to come before the Council I should have seen that a copy of the list was given to every member. I thought that the subject would not be before the Council. Is it really before us?

Dr. MCVAIL: It is included.

The PRESIDENT: I hold that Dr. McVail is quite in order in raising this matter. The subject of whether the amended regulations of the Conjoint Board of England will secure a satisfactory education for persons desirous of entering the medical profession cannot be inquired into without reference to the Royal Colleges.

Sir WILLIAM GAIRDNER: We should have had ample notice of the discussion taking this particular form.

Dr. GLOVER: This is an immense extension of the subject that we thought we were going to discuss. If you are going into the efficiency of the Colleges, into their ability to give scientific education, you ought to give them notice.

The PRESIDENT: You are questioning my ruling Dr. Glover. I must say that looking at this matter without prejudice and simply as a man of business sitting in this chair I hold that the discussion raised legitimately emerges from the submission by the Colleges of their new regulations.

Mr. YOUNG questioned whether the Council was not losing sight of the most important matter that underlay the present proceedings. His view was that the Council should discuss the matter as far as possible without reference to the Royal Colleges. The point which seemed to him to be fundamental, and more important than the question as to the satisfactory or unsatisfactory nature of a school wherever it might be situated, was the extremely far-reaching consideration which the new regulations brought forward. The distinction between the new regulations and the old might briefly be summarised in this way—a student may attend instruction without being registered by the General Medical Council, although he may have passed the preliminary examination. That was why he said the regulations were far reaching. The claim substantially was that the licensing bodies should have power to do what they chose. There was a list of institutions reorganised by the Royal Colleges before the Council, but there was no guarantee that that list might not be added to. If so what became of the work of the General Medical Council in endeavouring and determining to raise the standard of education? It was really so much waste of time on their part. Before entering into details of the scheme suggested by the new regulations the Council should say whether the medical licensing bodies in future were to have the power to determine what scholastic institutions were and were not to be recognised as places in which suitable instruction could be obtained.

Dr. PETTIGREW said that the question before the Council was one of the most important that had come before them for many years. The Council had done the best they could to gradually raise the status of medical education and the English Royal Colleges had been parties to all the several steps which had been taken. In their new regulations, however, they were introducing a disintegrating factor which, if agreed to, must produce a serious cleavage in every department of medical education. These new regulations would virtually establish a four years' curriculum in place of the five years required by the Council. He hoped that the Royal Colleges would reconsider their position in regard to this matter.

Sir JOHN BATTY TUKE was of opinion that the action of the two Colleges simply meant reversion to the four years' course and if they were successful in attaining their object their action would be followed by a large number of the other licensing bodies. It was an open secret that the Irish licensing bodies wanted to reduce the course to four years. He had heard it stated so, and so far as the action of the Royal Colleges went it seemed that it was extremely probable and almost justifiable. He might say that if the action of the Colleges was acceded to by the Council, or persisted in against the wish of the Council, the great universities would follow the example set by these Colleges. That seemed to be an inevitable result and the Council on the present occasion should confine themselves to that point rather than to the details of examinations. If it was proposed that the Council should take the extreme step of representing to the Privy Council that the examinations of the English Royal Colleges were not sufficient he thought they would mean business, but mere talk was of no good.

Dr. LOMBE ATTHILL said that the Irish representatives looked upon the step proposed to be taken by the English Royal Colleges with great regret and if it were gone on with he was not sure what the result would be. He was, however, directed to say in the meantime that if the English Colleges did not abide by the recommendations and requirements of the General Medical Council the Royal College of Physicians of Ireland, which he represented, must take such steps as after due consideration they thought to be necessary.

Mr. BALL said that the Royal College of Surgeons in Ireland, which he represented, had come to no decision in the event of the General Medical Council taking steps to report to the Privy Council inadequacy of the examination of the English Colleges. He was strongly of opinion that the matter should be arranged definitely soon. His College had been in expectancy for the last 18 months and because of the absence of a decision on the part of the General Medical Council on this question they did not know in what direction to formulate plans.

Dr. NORMAN MOORE defended the action and position of the Royal Colleges. He thought that in this discussion they were unnecessarily raising too many side issues. What was the difference which had caused the dispute between the General Medical Council and the Royal Colleges? There undoubtedly was a difference, but what was it? The Royal Colleges had all along supported the demand for the registration of students, and in former years had supported the General Medical Council in their resolutions to enforce it. The Royal Colleges had no desire whatever

to disturb that arrangement. They wished to support the Council, but so far as instruction in chemistry, physics, and biology was concerned they claimed that they should have power to say at what institutions these subjects might be taught to possible or probable members of theirs. The Colleges insisted that they were entitled to lay down regulations of their own to secure that. The General Medical Council desired to raise the standard of education, so as to ensure that men or women entering the medical profession should have as thorough an education as it was possible to give or to obtain. That was exactly the object of the Royal Colleges. He, of course, was speaking for the Royal College of Physicians only, but he must say this, that he had never heard any opinion expressed or any suggestion made in respect to the Royal College of Surgeons which would disjoin that College from the College of Physicians in this special matter. Both were equally concerned with the improvement of medical education, with the maintenance of its standard. Any idea as to whether the lowering of the standard would add to the income of the Colleges or enhance their status had nothing whatever to do with the matter. When there was the same object in view why should there be this dispute? The Colleges contended that possible members of theirs might acquire instruction in chemistry, physics, and biology at places other than those on the list of the General Medical Council. They tried to find out what these places were, and they took into consideration the fact that there had been progress in the conduct and the teaching in public schools. For instance, far more science was now taught at Eton and Winchester than was taught in these schools some years ago. That surely ought to be taken notice of, for it had the most direct relation to the medical profession. The Royal Colleges, thinking so, were of the opinion that instruction in the three subjects in question might now be obtained at institutions other than universities or medical schools recognised by the Council. Instruction in these subjects must be obtained after passing the preliminary examination, and as that could not be taken until the student was 16 years of age there was no fear of any flooding of the profession with immature men. The Colleges had to consider the relation of the scientific education of the present day to their curriculum, and they had to ask: How was scientific education carried on in the medical schools and was scientific education always carried on in the most judicious circumstances? In certain institutions scientific education was undoubtedly not carried on in the magnificent way in which it was at Cambridge, but that was hardly a reason why it should be excluded from institutions that as closely as possible followed the University course. He certainly should like to see all candidates for the medical profession going to the universities, but really were there not in London schools that would give as good tuition in the three subjects in question? The answer to that question was that there were a good many, all of which had been examined and carefully inspected by the Royal Colleges. It was only fair that the list of these should be given to the Council, so that each individual institution should, if necessary, be criticised. The Royal Colleges did not include in their list what were called adventure schools. They laid down the rule that any school which they recognised as an institution in which scientific instruction might be given must be a public foundation. That was to say, it was in no sense to be a private institution; it must have a public governing body. They, moreover, insisted that its equipment should be satisfactory, and that included this provision—that there should be separate teachers for each of the three subjects of practical chemistry, physics, and biology. They refused to recognise an institution in which the same teacher taught both chemistry and physics. Such facts as these showed that the Colleges had taken great pains to ascertain whether there were in the schools included in their list the means of carrying on scientific education of the kind required by the Council, and they thought that they were doing a great public duty in thus encouraging scientific institutions. After referring to the Harris Institution in Preston and the Higher Grade Board School of Norwich—places which, he said, he had personally visited and approved of as places in which the education required by the Council for medical candidates could be obtained, he insisted that the Royal Colleges were doing a public duty in recognising the scientific teaching given in higher grade board schools. It was not sufficient for any member of Council to say that he objected to higher grade board schools. If there was to be objection at all it must take this form: "I object to the higher grade school at such and such a place." The Royal Colleges, he thought, wished for criticism. It was the duty of the General Medical Council to criticise them as well as all the other licensing bodies. That was the way by which progress was secured. But where comments were made the criticism should be fair and just and should show that the Colleges wished to advance and to encourage education. The Colleges printed a list of institutions which should be recognised by them for the purpose of scientific education. So the whole difference between them and the General Medical Council was this: "What should these institutions be?" The Colleges were distinctly of opinion that they should be those which should most efficiently advance education. Both the Colleges and the Council had tried to find out these institutions. Why should they differ? The Colleges were of opinion that the Council went outside its functions when it dictated to the Colleges on such a detail as this. That was the opinion of the Colleges. These Colleges were assured that it was their duty to ascertain that the teaching, the place of teaching, the appliances for teaching, and everything which led to candidates becoming members of the Colleges, were sound and thorough. They should listen to no particular criticism on that. As a matter of fact they were willing even to retire from the Council's registration of students rather than give away the rights and responsibilities which by charter and Acts of Parliament had been entrusted to them. The General Medical Council he believed, had taken a false step in this matter. It had, he believed, misunderstood the action and position of the Colleges. There had been a suggestion that the Colleges did not wish to carry out the five years' curriculum. That was a mistake. The Colleges had carried out in the most loyal way the five years' curriculum ever since it was instituted in 1892. Never since that year had students been admitted to their roll without having gone through a five years' medical course after passing the preliminary examination in arts. This regulation, as a fact, had been enforced in the most thorough, straightforward, and rigid way. Therefore he hoped that the dispute would be settled amicably. It was of great importance to medical education that it should be. It was of great importance that the existing system of registration should be kept up, but he thought that it should be broken up rather than that the responsibilities of the individual bodies should be taken away. There was no feeling of defiance or anything of the kind on the part of the Royal Colleges to the Council. These Colleges wished to support the Council in every way. They felt that its work had been useful and that the difference between them was very slight, but at the same time they wished their own list of institutions to be accepted.

Sir CHRISTOPHER NIXON, speaking as the President of the College of Physicians of Ireland and representative of the Royal University of Ireland, thought that if the question of raising and maintaining the standard of education was properly put to the two English Royal Colleges there would be no difficulty in securing assent from them, because, as their representative had said, he believed that they had simply in view the General Medical Council's desire to raise the standard of education as respects candidates for the medical profession. He distinctly disagreed with anything that would mean a return to a four years' curriculum, and he insisted that the five years which the Council recommended and required should be rigidly adhered to.

The Council adjourned, leaving the debate unfinished.

MONDAY, JUNE 10TH.

The Council met again to-day, with Sir WILLIAM TURNER in the chair.

The Council and the English Royal Colleges.

The Council resumed the consideration of the communications from the Royal College of Physicians of London and the Royal College of Surgeons of England and the debate on Dr. McVail's motion:—

That the communications from the Royal College of Physicians of London and the Royal College of Surgeons of England, in so far as these relate to the courses of study accepted by them in the subjects of their first professional examinations, do not afford evidence that these courses of study are in all cases sufficient.

Dr. MACALISTER said that there were one or two omissions in the very able and courteous speech of Dr. Norman Moore

to which he desired to call attention. One of them was that the Council had laid down after much consideration the principle that a student who proposed to be called a medical student and to be registered as such should have finished his ordinary school education before his five years of medical study should have begun, and the point at issue was really this, Should they admit to the five years' curriculum students who had not finished their ordinary school education? However well equipped these schools might be for the school teaching of chemistry, physics, and biology, should they allow a student as his first year of medical study to spend a year partly in the study of these subjects and partly in the study of school subjects? Should they admit medical half-timers for the first year of medical study? The Council had pretty clearly indicated its desire that such a state of things should not be recognised. He would go further and point out that by recognising some of the institutions which had been proposed for recognition they should do something more pointedly to diminish the true value of the first year of medical study because they should admit institutions which gave instruction in these subjects at evening classes. If they did that there was nothing to prevent a student who desired to be called a medical student to put in his day and the freshness of it in the pursuit of some ordinary trade or profession and give his evening to what he would call the first year of his medical curriculum. He believed that in the old days, in Dublin at least, there was a group of students of this kind. These were not favourably regarded by the medical profession or the medical teaching bodies in Dublin and steps were taken to put the class to an end. Although interesting, it appeared to him to be more or less irrelevant to consider how good these institutions were. They might be very well equipped, indeed, for the purpose of giving boys a liberal education which should include science, but that was not the question. Were the conditions such as to require the serious study during the first year exclusively of the three subjects for which the institutions claimed credit? If that were not the case, however well the institutions might be equipped for other students, they were not fit for complete recognition as places for the first year of medical study. The other point omitted by Dr. Norman Moore to which he desired to call attention had reference to the preliminary examination in general education. It would be observed that under the new regulations of the English Colleges a recognised examination in preliminary education was to be one recognised by the Colleges and it was added that a list would be supplied on application. There was nothing about an examination on the list sanctioned by the Council. The Council knew that by slow steps and with great difficulty they had gradually been able, by the elimination of unsuitable examinations and by the raising of the standard of others, to bring up the condition of preliminary education to its present state, and all of them desired to see it raised still higher. But unless there was some central authority like the Council to see that these examinations were gradually raised it would be perfectly impossible for them to maintain the standard of liberal education which had always been the goal of the Council. If the English Colleges were to make a list of recognised preliminary examinations in arts it was of course equally open to every other body to claim the same right and insist upon it—a state of things which he could not regard as desirable. In his opinion the action of the English Colleges was fraught with great danger to the whole course of medical study and curriculum.

Mr. HORSLEY said there seemed to be an idea that this was a mere academic discussion with no practical interest for the bulk of the medical profession. That was a great mistake. Again and again the profession had expressed itself in the direction that the preliminary examination in arts must be raised to a level above that to which the General Medical Council had with great difficulty succeeded in raising it. What applied to the preliminary examination applied also to the preliminary scientific part of the students' education. Upon this action of the English Colleges there was hinged, although unwittingly, disloyalty to the principles of the Medical Act of 1886. If by the Act of 1886 there was a kind of consensus of opinion among the licensing bodies that they would, as it were, agree together for the conditions under which a student should pass immediately into the profession from his qualifying examination, surely there was also carried with that a consensus of opinion that the Council should represent the licensing bodies in the construction and regulation of the preliminary parts of the examination. He knew there were people who said that the Act did not give the Council a *locus standi* in dealing with these subjects. That was a matter for argument and he would not now enter into it, but certainly there was a feeling in 1886 that the licensing bodies, though possessing privileges by legal right, should nevertheless agree to sink the exercise of these privileges in order that they should all move together in the progress of medical education. Now this was an instance of the kind. No one denied the legal right of the English Colleges to do what they proposed. He was quite aware that the Council had been advised that there were points on which legal action could be taken if necessary, but he earnestly hoped that no such legal action would ever be taken in this matter, but, taking it simply from the point of view of ordinary fairness of agreement and coöperation, he did think that the English Colleges made a fatal mistake in medical education when they came forward and put into operation the rights which they appeared to possess but which other licensing bodies possessed and which other licensing bodies could have put into force if they had thought fit. Look at the consequences of their departure. The Council had gradually built up a system of registration of students. The Council realised the value of that registration and he did not suppose there was a teacher in any medical school who did not fully appreciate the value of that registration, and yet by an unfortunate accident that registration was made to suffer for this specific action on the part of the English Colleges. He had no doubt that these Colleges would have been very glad, as they took their share in the formation of the Students' Register, to avoid injuring such an important factor in the students' career, but the course that they decided to take had had this fatal effect. He was therefore really horrified to hear Dr. Norman Moore say that, weighing the one thing with the other, his College was quite prepared to ruin students' registration rather than forego the responsibilities of which he spoke. If the other licensing bodies did not think that their status and welfare were injured by foregoing their responsibilities he did not see why the Royal Colleges should have taken up this attitude. In his opinion they had done a great injury to medical education, and in spite of the eloquence of Dr. Norman Moore he thought that would be the way in which the medical profession would regard their action.

Dr. LITTLE asked from Dr. Norman Moore some information about the kind of chemistry taught in the institutions which it was proposed to recognise.

Dr. NORMAN MOORE said that the teaching of chemistry had always been a difficulty in connexion with medical education. One was constantly hearing complaints from the deans of schools upon the subject. In the institutions referred to he had no reason to believe that chemistry was taught in any different way from, say, his own school, St. Bartholomew's.

Dr. WINDLE pointed out that there were about 60 cities and towns in the list at present recognised by the English Colleges but no doubt with the advance of scientific teaching in schools the list would be enormously extended and it could not be very long before in every important town there would be a school coming up to the standard of those in the present list. That meant that there practically would be for the great majority of students presenting themselves for these diplomas a four years' course in a medical school and for all other students a five years' course in a medical school. Therefore, he considered this a death-blow to the idea which some of them cherished of a fifth year given up to clinical work. Last session Sir Dyce Duckworth relied on the test of examination, but examination should only be an incident in the career of a student, the essential thing being the carrying out of the curriculum. The kind of unity desiderated by Dr. Norman Moore was rather a singular one. It was a unity in which the lion lay down with the lamb, but the lamb, if he might so designate the Council, was inside the lion. The Council was to agree with the Royal Colleges and then, and only then, all would be peace.

The PRESIDENT asked Dr. McVail whether he intended if his motion were carried to represent the matter to the Privy Council.

Dr. MCVAIL replied that if the motion were carried, as he hoped it would be, he would be perfectly content to leave the matter there until next session. The Royal Colleges and the other bodies would thus have an opportunity of understanding the position of the Council in the matter.

Sir WILLIAM GAIRDNER said that in his opinion the English Colleges were quite right in principle, but it was open to doubt whether they had taken in all points, the proper way of carrying out the principle. He thought the English Colleges were right in throwing back the scientific education upon the schools and that they would be more and more right as scientific education advanced in the schools. At the present moment he doubted very much whether even at the best universities chemistry was taught in a proper way for a medical student. He believed that boys would get more chemistry, and more chemistry of the right sort, in their later school life than they would get in some of the classes of the medical schools. With regard to Dr. McVail's motion, he would not vote for any motion which conveyed, or appeared to convey, censure upon the English Colleges for a course which he believed to be the right course and which he believed would become the inevitable course and the essential course if their boys and young men were to get these subjects into them at all. There had been great progress in scientific education in recent years and now it seemed that the Council was going to step athwart the path of progress. He would not assent to that or appear to assent to it in any way.

Dr. MACALISTER: How about the five years?

Sir WILLIAM GAIRDNER said that Dr. Norman Moore had told them that the five years were to be maintained. But that was a matter of detail which could be settled in a conference with the Colleges and it was not a cause of quarrel.

Sir WILLIAM THOMSON said that he would like to say a few words from the point of view of those Irish representatives who had brought this subject to the notice of the Council. They brought it forward because they were parties to an agreement in the Council which they thought would be adhered to with reference to medical education. They came to an understanding that they were to have five years of *bona-fide* medical education. Then suddenly they became aware that one of the parties to the agreement had, as they conceived, broken through it. In the case of Ireland they fortunately had no department in their grammar schools which gave them an opportunity of evading the agreement. When they brought the matter before the Council they found that the authority of the Council was disputed. Now the English Colleges said that the difficulty was registration. Dr. Norman Moore had told them that he approved of registration but the English Colleges told the Council that because the Council asked them to adhere to the original arrangement, and because the Council objected to what it thought an evasion of the arrangement, they would strike out registration altogether and put in preliminary examination. So far as he saw in these arrangements as regards preliminary examination it seemed to him that the position was very much the same as before. The student who went in for this preliminary examination could take his preliminary examination at his grammar school and the day after he had passed it he could go in for the crop of so-called scientific subjects. He hoped that the passing of this motion would give the English Colleges the opportunity of reconsidering their position. It was most unfortunate that bodies like these English Colleges should be the first to lead a resistance to the Council, a resistance which he assured the Council would be very quickly followed by other bodies if it were not withdrawn.

Dr. GLOVER thought they should discriminate between two questions which had been confused—viz., the adequacy of the regulations of the Colleges and the right of the Colleges to dictate the schools where science should be taught. Whatever Dr. McVail might say about his intentions, the proper thing for the Council to do if it passed the motion was to appeal to the Privy Council. The experience of the Council in appealing to the Privy Council had not been altogether happy, and he thought it would say little for the tact of the Council if it could not settle this matter within its own doors. He hoped the Council would give an emphatic negative to the motion.

Mr. BROWN said that he supported the motion because he thought it would enable the Council to settle the matter within its own doors. He hoped the Royal Colleges would recognise that they had been a little premature and would see their way to withdraw their new regulations and only recognise students who had been registered by the Council.

Dr. BRUCE said that it had been suggested to him that it would save time if he withdrew the motion of which he had given notice in favour of one which Mr. Ball would propose. The motion in the name of Dr. Bruce was in the following terms, viz.:—

That it be referred to the Education Committee to consider and report to the Council whether it is desirable and practicable to provide—(1) that students shall be required to pass a recognised examination in the subjects of physics, chemistry, and biology subsequently to passing a recognised examination in the subjects of preliminary education; (2) that a second or preliminary scientific registration of students who have thus passed in chemistry, physics, and biology be established by the Council; (3) that, dating from this second or preliminary scientific registration, the period of professional medical study be four years.

Mr. BALL said that what he proposed to move was:—

That it be referred to the Education Committee to consider and report to the Council whether it is desirable and practicable to provide: That after a date to be named the preliminary examination for admission to the medical profession shall consist of two sections: (*a*) an examination in general education as at present authorised by the General Medical Council; and (*b*) an examination in physics, biology, and chemistry conducted by any recognised licensing body. That no person be permitted to register as a medical student with the Registrar of the General Medical Council who has not passed both the above sections of the preliminary examinations and has not produced evidence of entry at a recognised medical school. That no person receive any diploma until after the expiration of four winter and four summer sessions from the date of registration.

The PRESIDENT ruled that this proposal was not in order as an amendment to Dr. McVail's motion but was in order as a separate motion.

After there had been some discussion on points of procedure,

Dr. REID, seconded by Mr. BROWN, moved the closure.

This motion was carried without a vote.

Thereafter a vote was taken on Dr. MCVAIL'S motion, when 13 members voted for it and 15 voted against it, three other members declining to vote.

The motion was accordingly lost.

The PRESIDENT wished the Council to say whether he was to put to them Dr. Bruce's motion or Mr. Ball's proposal as a substitute.

Dr. BRUCE wished to withdraw his motion in favour of Mr. Ball's.

Sir CHRISTOPHER NIXON, who had agreed to second Dr. Bruce's motion, declined to accede to the withdrawal of the motion unless it was understood that Dr Bruce could make a proposal in the event of Mr. Ball's being rejected.

The PRESIDENT thought the Council might without discussion refer both proposals to the Education Committee.

Dr. GLOVER hoped the Council would pass no such resolution without consideration. The establishment of an examination to supersede all existing scientific examinations was a matter that was not to be dealt with lightly.

Dr. MCVAIL said that he would certainly vote against any remission of this matter to the Education Committee. The Council had that day decided that the two Royal Colleges of England had done right (several members: "No, no") and that the General Medical Council had done wrong. There was no use in crying "No, no," for the Council's rejection of his motion meant that the two Royal Colleges were right and the Council was wrong. It had been decided by 15 votes to 13 that the Conjoint Board of England could do what they liked. The medical authorities in Scotland and Ireland would no doubt follow the example they set. Dr. Bruce proposed a second registration of students. What was the good of that? By the action they had taken the Council had decided absolutely to sweep away the registration of students.

The PRESIDENT: No, no.

Dr. MCVAIL: Oh, yes, that is the effect of the Council's decision; all registration is gone. And yet Dr. Bruce comes up proposing not one registration but two.

Dr. LOMBE ATTHILL wished to second Mr. Ball's proposal.

Dr. PETTIGREW objected strongly to this matter being referred to a committee of the Council. He thought the proposals before them amounted to an attempt to doctor or tinker the profession and the professional examinations. The General Medical Council had spent an enormous amount of time and money in order to reach the five years' curriculum, and having done so it was now known by the licensing bodies and also by students what were the Council's requirements. Yet so soon as they got into line they had to face the disintegrating element that had been thrown into their midst. So far as the Scotch licensing bodies were concerned they had no power which would permit them to insist on a second examination for registration. The motion practically removed chemistry, physics,

and biology from the medical course. These subjects were not only important as part of the curriculum, but were every day becoming more important.

The PRESIDENT indicated to Dr. Pettigrew that he was wandering from the point before the Council.

Dr. PETTIGREW: I don't think so.

The PRESIDENT: That is my ruling. As to the proposals before the Council, my feeling is that of the two proposals Mr. Ball's, I think, is to be preferred. But we should remit both without discussion to the Education Committee for their consideration and report.

Sir WILLIAM THOMSON, seconded by Dr. REID, moved:—

That the Council instead of expressing an opinion on the principles involved in the motion proposed by Dr. Bruce and the amendment proposed by Mr. Ball refers them to the Education Committee for consideration and report to the Council.

Dr. MCVAIL objected to accept any such motion. It contemplated the possible ruin of scientific education in the Scotch universities and he declined to see scientific education in the Scotch universities even threatened with ruin. The English and Irish bodies could do what they liked, but he most emphatically objected to the whole of the movement inaugurated by Dr. Bruce and Mr. Ball so far as it might concern the Scottish licensing bodies.

Some conversation took place as to whether the proposals raised questions that ought not to be dealt with on the last day of the session.

Dr. GLOVER asked if there was any precedent for the Council sending to a committee resolutions to which they had not after discussion agreed.

The PRESIDENT said that it was for the Council to determine what should be done on the present occasion.

Sir WILLIAM THOMSON'S motion was passed by 16 votes to eight, six members declining to vote and one member being absent.

The Apothecaries' Hall of Dublin.

Mr. BRYANT, on behalf of the Examination Committee, submitted reports from the committee on the inspection of the examinations of the Apothecaries' Hall of Dublin held in January and April last. These were as follows:—

In January last there were no candidates for the first and second examinations. For the third examination two candidates entered who had previously been rejected in parts of this examination. One of these passed in one subject only and was rejected in two subjects. The other was rejected in the solitary subject he entered for. Candidates are permitted to pass in single subjects in the first, second, and third examinations of this body. Your committee has again to express its disapproval of this piecemeal method of passing examinations and directs the attention of the General Medical Council to this matter. For the final examination there were three candidates who entered for all the four subjects of it. Two of these had been rejected in parts of this examination on previous occasions. Two were rejected. One candidate entered for surgery alone and passed. The inspector reports that he was entirely satisfied with the method and conduct of the examinations and that he fully approved of the marking of the examiners. The rejected candidates, he remarks, were of inferior quality in professional knowledge and spelt badly. Your committee recommends that inquiry be made as to the examinations passed by these particular candidates (A5 and A43) in preliminary education. The assistant examiners in surgery report that only one of the three candidates passed in this subject, and having thus completed his examinations obtained his diploma. The other two did not in any way reach the necessary standard in any of the subjects. It appears that these examinations, for which the General Medical Council is made responsible, have now reached, under its supervision, an improved standard. Although very few candidates resort to this Board for their qualification, yet the cost to the Council of its obligatory inspections is very considerable and constitutes a burden on its finances which does not appear to be justified by the very small number of Licentiates annually turned out by this body.

Candidates for the final examination are not admitted at the April examination. The committee have to observe that as a result of the second examination only two men passed, and these in the single subject of pharmacy. The committee are pleased to record that their inspector regarded the examination as satisfactory.

Both reports were received and entered on the minutes.

Dr. BRUCE, seconded by Mr. BROWN, moved that the special inspection of the examinations of the Apothecaries' Hall, Dublin, should be for the present discontinued; but the proposal was not pressed on its being pointed out that the Council's inspector of the examinations (Dr. W. P. Herringham) had last November been appointed for a year.

During the remainder of the sitting the Council sat *in camerâ* considering a dental case.

TUESDAY, JUNE 11TH.

The Council met to-day an hour earlier than usual and succeeded in getting to the end of the work of the session before it rose. Sir WILLIAM TURNER was in the chair.

Restoration to the Dentists' Register.

After an inquiry in the course of which the applicant was examined by members of the Council, it was decided to accede to the application of Mr. William Vansittart of Peckham to have his name restored to the Dentists' Register.

The Finances of the Council.

Mr. HORSLEY, seconded by DR. PETTIGREW, moved—

That a committee, consisting of the President, Mr. Bryant, Mr. Tomes, Dr. Bruce, Dr. Heron Watson, Dr. Atthill, and Sir Christopher Nixon, be appointed to consider what amendments to the Medical Acts are necessary in order that the relations between the Council and the Branch Councils may be readjusted, and the financial position of the Council placed on a satisfactory basis, and be instructed to report to the next session of the Council.

Sir HUGH BEEVOR, seconded by Dr. REID, moved to make the motion read "to consider what amendments, if any, to the Medical Acts are necessary in order that the relations between the Council and the Branch Councils may be re-adjusted and how the financial position of the Council may be placed," &c.

Mr. HORSLEY expressed his willingness to accept these changes.

The motion thus altered was adopted by the Council and the name of Mr. Horsley was added to the committee. It was agreed that the committee should have the title of the Financial Relations Committee to distinguish it.

Election of Junior Treasurer.

The PRESIDENT said that owing to Sir Dyce Duckworth having ceased to be a member of the Council there was a vacancy in the office of one of the treasurers. It was customary that the two treasurers should be chosen from the English Branch, and the present senior treasurer was Mr. Bryant, a Fellow of the Royal College of Surgeons of England. It had been customary for the treasurers to be members of the Royal Colleges of Physicians and Surgeons, and if that were the view taken now then the Council would appoint a Fellow of the Royal College of Physicians of London to the vacant office.

Mr. HORSLEY said that he would venture to suggest a slight departure on this occasion. He wished to explain that he had not consulted the gentleman whom he proposed to nominate. The Dentists' was an extremely successful branch of their organisation from a financial point of view, and he was not aware that there had been any indication or acknowledgment of that in their official appointments. Mr. Tomes had given very special attention to the financial questions of this Council. It so happened that Mr. Tomes was a Fellow of the Royal College of Surgeons, but he hoped the Council would overlook that circumstance and accept his nomination as the junior treasurer.

Mr. TOMES said that this suggestion was absolutely new to him, although he could not but regard it as a great compliment that anyone should wish to nominate him for this office.

Dr. MACALISTER suggested that Dr. Pye-Smith should be appointed. Although he acknowledged the financial skill and knowledge of Mr. Tomes he thought that they should not have two Fellows of the same College.

Dr. ATTHILL said he would like to support the nomination of Dr. Pye-Smith.

Dr. PYE-SMITH thought the Council should accept Mr. Horsley's suggestion.

Mr. TOMES said that while he appreciated the compliment he thought the appointment should go to Dr. Pye-Smith.

A vote was taken with the result that the appointment fell to Dr. Pye-Smith.

The Executive Committee.

The following members were elected to the Executive Committee—viz., Mr. Bryant, Dr. MacAlister, Dr. Pye-Smith, Dr. Glover, Dr. P. Heron Watson, Sir William Gairdner, Dr. Atthill, and Sir Christopher Nixon.

Re-appointment of General Registrar.

On the motion of Dr. MACALISTER, seconded by Dr. GLOVER, it was resolved that Mr. H. E. Allen be appointed the General Registrar until the close of the next summer session of the Council.

Students' Registration.

A report by the Students' Registration Committee on exceptional cases was brought up by Dr. MACALISTER and agreed to, Dr. MacAlister explaining that there was nothing novel in any of the cases.

Examination Exemptions.

On the motion of Mr. HORSLEY, seconded by Dr. MACALISTER, it was agreed—

That the medical authorities who grant exemptions in any part of the examinations which they hold be annually requested to furnish the Council with a detailed list of the exemptions granted by them in the examinations held by them, and that such list be reported to the Council instead of Table (c) of the yearly tables.

Penal Cases Committee.

The ballot for the Penal Cases Committee resulted in the election of Mr. Bryant, Mr. Tomes, Dr. Glover, Mr. Horsley, Dr. Heron Watson, Dr. Bruce, Sir Christopher Nixon, and Sir William Thomson, with the President as an *ex-officio* member.

Unqualified Dispensers in Scotland.

The PRESIDENT announced that while sitting *in camerâ* the Council had received a letter from Dr. John Orr, secretary to the Association of Medical Practitioners in Glasgow and the West of Scotland protesting against the refusal of the Council to receive their memorial on the subject of "doctors' shops" and to hear the deputation appointed to support it. The Registrar, he said, would read the letter and the resolution passed by the Council in regard to it.

The letter was as follows:—

Arundel Hotel, Victoria Embankment, London, W.C.,
6th June, 1901.

To the President and Members of the General Council of Medical Education and Registration of the United Kingdom.

GENTLEMEN,—In acknowledging receipt of your letter of the 4th inst., we, the undersigned members of a deputation sent in reference to a matter of vital importance to the interests of the medical profession in Glasgow and the West of Scotland, hereby formally protest against the action of the General Medical Council in refusing to accept a memorial signed by 400 practitioners, and to hear the deputation sent in support thereof.

We are, Gentlemen, your humble and obedient servants,

WM. WATSON.	W. RUSSELL.
D. YOUNG.	HUGH KELLY.
JOHN STEWART.	CHARLES R. ROBERTSON.
	JOHN FRASER ORR, Secretary.

The Council's resolution was:—

That the Registrar be instructed to inform Dr. J. Fraser Orr, secretary, that the letter forwarded by him and dated June 6th, 1901, has been communicated to the Council, and that in view of possible proceedings before the Council as a judicial body the Council cannot further discuss the subject-matter of the memorial.

Public Health.

Dr. BRUCE, as chairman of the Public Health Committee, submitted the following report:—

The Committee beg to report that an application has been received from the University of Birmingham for the recognition of its diplomas and degrees in Public Health. The Committee have met twice and have carefully considered the regulations laid down by the University; they have also had the benefit of conferring with Dr. Windle, the representative of the University, as to certain matters of detail. The Committee submit to the Council a print of the proposed scheme of study and examination, and recommend the Council to approve of the same. The Committee have also had before them a letter from the chairman of the London Hospital, in which he complains that the extension of the curriculum for diplomas in Public Health to nine months will inflict great hardship on students and that the regulation requiring students to attend day by day on a medical officer of health in his routine work is impracticable. The Committee recommend the Council to inform the chairman of the London Hospital that the regulations were adopted by the Council after long and careful consideration and that they must be strictly adhered to. The Committee also considered a request from the Royal Institute of Public Health that the Committee would receive a deputation on the subject of the new regulations and it was resolved that the Institute should be informed that the Committee would be glad to consider any written communications but was not prepared to receive a deputation. No further communication from the Institute has been received at present.

In moving that this report should be received, entered on the minutes, and adopted, Dr. Bruce, referring to the complaint by the authorities of the London Hospital, said that in the meantime it was premature for the Council to discuss the question of six or nine months. They had adopted nine months and they ought to have much more experience of its working before they re-considered it. As regards the Royal Institute of Public Health he hoped that that Institute would not consider the committee uncourteous in refusing to receive a deputation of their number and suggesting that their case could be presented by a written communication.

Dr. BENNETT seconded the motion, which was agreed to, as was also the following resolution, proposed by Dr. MACALISTER and seconded by Dr. WINDLE:—

That the attention of the University of Birmingham be called to the regulations of the Council which were passed on Dec. 5th, 1900, and will come into force on Jan. 1st, 1902, and that the University be requested to embody these in its regulations for its degree and diploma in Public Health.

Prevention of Personation.

The Council went into committee to resume consideration of the report of the Committee on the Prevention of Personation.

Mr. HORSLEY, chairman of the Committee, reminded the Council that they had passed the first recommendation of the Committee in a modified form and also a part of the second recommendation. He now proposed as "Recommendation 3":—

That with the view of the identification of applicants for registration on the Medical and Dental Registers the form of application shall be filled up by the applicant.

Dr. MACALISTER said that in this matter they must have regard to the provision in Section 15 of the Act of 1858.

Mr. HORSLEY objected to any such alteration of his resolution. If the Council passed the recommendation of the Committee which had now been before them for two years they would by the terms of the last of the serie require to appoint a committee to draw out in detail regulations to carry out the principles involved in the several recommendations.

The PRESIDENT thought that it would be nonsensical to take the Committee's recommendations that day, refer them back to the Committee as the last of the series proposed, and then have to go over all the same ground again when a new report came up before them. There was no use in discussing principle and then details. If the recommendations were to go back to the Committee at all they should go now, so that both principles and details should be brought up in a final form.

After some conversation it was agreed—

That the Personation Committee be re-appointed and requested, in consultation with the registrars, to bring up for the consideration of the Council a complete set of regulations as a pendant to the recommendations made in their report.

Medical Aid Associations.

Dr. GLOVER brought up the following report:—

The Medical Aid Associations Committee have to report that they continue to receive communications from various parts of the country on the subject of the working of medical aid institutes, especially such as are connected with insurance companies. They have also received at various times communications from officials of the British Medical Association on the same subject and with special reference to the suggested formation of a Conciliation Board for the friendly settlement of matters in dispute between the profession and the friendly societies. On Saturday, June 8th, the Medical Aid Associations Committee, as empowered by the resolution of the General Medical Council, received a deputation consisting of a committee of the Council of the British Medical Association which had been appointed to confer with the representatives of the friendly societies to discuss the formation of a Conciliation Board. It is satisfactory to your Committee to learn that the general impression produced on the members of the committee of the British Medical Association at the conference with the members of the friendly societies was, on the whole, favourable to the formation of such a board. This feeling was qualified by the fact, reported to your Committee, that the representatives of friendly societies do not see their way at present to submit the question of a wage limit to a Conciliation Board. Notwithstanding this fact the Council of the British Medical Association has re-appointed its committee to watch the progress of the question in a spirit favourable to the formation of such a board. Your Committee recommend their re-appointment.

In moving the adoption of this report Dr. Glover said he thought that it contained all that he should say if he spoke in a general way. The Council might take it that opinion in favour of a conciliation board was growing both in the profession and its great representative body—the British Medical Association. He therefore hoped that the Council would agree to the proposal for the re-appointment of the Committee. Personally, he thought the Committee's work practically was done, but they were willing to continue it if the Council saw fit.

Dr. MACALISTER, in seconding, tendered the thanks of the deputation of the British Medical Association's Council for their reception by the Medical Aid Association's Committee on Saturday last.

Mr. BROWN thought the words "especially such as are connected with insurance companies," which appeared at the end of the first paragraph of the report, ought not to appear.

The PRESIDENT thought it did not matter whether these words appeared or not. They presented a mere statement of fact and not any opinion by the Committee presenting the report.

Dr. MCVAIL thought that this Medical Aid Associations Committee should cease to exist. It was doing no good whatever. By it the Council were attempting to do what they had no power whatever under the Acts to do. There was no clause in the Medical Acts which either directly or indirectly permitted the Council to take part in the promotion or formation of a medical conciliation board.

Mr. HORSLEY suggested that the proposal for the reappointment of the Committee should be withdrawn, because when the British Medical Association had come before them they were informed that the Council could do nothing in the matter.

Dr. GLOVER said that he had gathered at the meeting on Saturday that the representatives of the British Medical Association thought that the Committee might continue in existence and be of use in the future. There was no doubt that they had already done a great deal of good. Their part as a Committee had essentially been done, but they should be glad to give any friendly help to the work which the British Medical Association were interested in and he could, as chairman of the Committee, promise both Dr. McVail and Mr. Horsley that he should do all he could to dispose of the question quickly.

On the understanding that the Committee should exist for no more than another year Dr. MCVAIL consented to drop his opposition and the motion for the approval of the report was agreed to.

Mr. BROWN proposed:—

That notices be published by advertisement and otherwise to the effect that association with medical aid societies and clubs which systematically canvass for patients will be regarded by the Council as infamous conduct in a professional respect, rendering any practitioner proved to be guilty thereof liable to have his name removed from the Medical Register.

As this proposal did not find a seconder it "fell to the ground."

Direct Representation of the Profession.

Mr. BROWN next moved:—

That in the opinion of the Council the time has come when it is expedient to confer on the registered medical practitioners resident in England and Wales the power of returning an additional member to the General Council as provided for in the Medical Act of 1886.

In submitting this proposal Mr. Brown mentioned that at present there were 2000 more practitioners in England alone than there were at the time of the passing of the Act of 1858. At that time the representation of three substantially gave one representative to every 5600 practitioners. If they now had five representatives on the Council the proportion would be one to every 5800, but he did not ask for the five whom England and Wales were certainly on account of population entitled to, but for only four. He did not see why this justice to the profession—it was hardly justice—should be denied. There was only one object he could conceive could be urged against the proposal and that was expense, but the expense of an additional member would mean to the Council no more than £150 a year, and he did not see why that should have weight with them. A reason for now passing his proposal was that the quinquennial election of representatives of the profession would take place in the coming winter.

Mr. HORSLEY seconded the motion.

Dr. GLOVER supported the proposal. He thought that it had been made in a spirit of moderation and that it was reasonable. Increased representation was contemplated by the Act of 1886, and he should be glad if all members of Council gave the proposal their support. He appealed to his colleagues who represented different views and interests to give a generous support to the proposal, which he believed, if carried, would tend to help in the smooth working of the Medical Acts.

On a division only six members voted for the proposal, 13 voted against it, three did not vote at all, while nine were absent. The motion accordingly was lost.

End of the Session.

Mr. BRYANT, recognising that the Council had finished their business, moved a vote of thanks to Sir William Turner, the President, for his able services in the chair during a trying and arduous session.

Mr. BROWN seconded this proposal, and it was carried unanimously.

The PRESIDENT acknowledged the compliment paid him, and the Council adjourned till the fourth Tuesday in November next.

Medical News.

UNIVERSITY OF CAMBRIDGE.—The following medical degrees were conferred on June 6th:—

M.D.—H. E. J. Biss, King's; R. A. Yeld, Trinity; W. H. Horne, Clare; and J. C. Muir, Emmanuel.
M.B. and B.C.—A. S. Mellor, King's; H. H. Riddle, St. Peter's; A. E. Carver, Clare; A. H. Davies, Caius; T. Wood, Caius; F. J. Child, Christ's; L. S. Gaskell, Christ's; and A. H. Brehaut, Selwyn.
M.B. only.—L. B. Scott, Christ's, and W. H. O. Woods, Selwyn.
B.C. only.—A. P. N. Anderson, Trinity; N. F. Ticehurst, Clare; and J. L. Timmins, Emmanuel.

UNIVERSITY OF BRUSSELS.—At the May examination the following practitioners passed and obtained the M.D. degree:—

W. Wallis Hoare; Miss H. Forbes, Burma; and R. Douglas Dobie.

SUCCESSFUL VACCINATION.—Mr. T. W. H. Garstang, M.A. Oxon., M.R.C.S. Eng., D.P.H., has been awarded the Government grant for successful vaccinations in the Altrincham district of the Bucklow Union.—Mr. Napier Close, L.R.C.S. Irel., L.R.C.P. Edin., public vaccinator of the No. 2 District, Chard Union, has been awarded the Government grant for successful vaccination.

A CENTENARIAN.—It is stated that Mr. Henry Richards of Worthenbury, near Wrexham, a retired agriculturist, has attained his 102nd birthday. When over 90 years of age he sang in the Worthenbury choir and was probably at the time the oldest chorister in the country. In his 100th year he received a congratulatory letter from the late Queen Victoria. His eldest son is about 80 years of age and his youngest descendant is but a few months old. He has 182 descendants—namely, 11 children, 66 grandchildren, 97 great-grandchildren, and eight great-great-grandchildren.

THE METROPOLITAN PROVIDENT MEDICAL ASSOCIATION.—By the kindness of the Hon. W. F. D. Smith and Lady Esther Smith a meeting of the Metropolitan Provident Medical Association was held on June 11th at 3, Grosvenor-place, S.W., to consider the work of the association. Mr. Asquith, K.C., M.P., said that he was glad to say a few words on behalf of what he believed to be an exceptionally deserving institution, and he submitted the following motion, which was seconded by Mr. B. L. Cohen, M.P., and carried unanimously:—

That it is necessary for the satisfactory medical attendance of the working classes in London that provident dispensaries, worked in coöperation with the hospitals under rules generally approved by the medical profession, should be formed in every district of the metropolis on the system of the Metropolitan Provident Medical Association.

Mr. Bousfield proposed, and the Right Rev. F. E. Ridgeway, Bishop of Kensington, seconded, the following motion, which was also carried without dissent:—

That this meeting regards with satisfaction the progress already made by the association in the formation of 21 branches where considerably more than 30,000 persons, contributing in small periodical payments over £6000 a year, have had secured to them by thrift and providence good medical treatment and medicine in time of sickness, and pledges those present to assist in raising funds for the creation of new provident dispensaries and their maintenance until they attain self-support.

THE LEBANON HOSPITAL FOR THE INSANE.—The third report of this institution—the building was opened in 1900—is interesting reading. The lunatic in Oriental lands does not lead an unhappy life except when his fellow-countrymen try to cure him. He is looked upon as more or less of a saint, and to this circumstance St. Francis of Assisi probabably owed his life when he visited the Sultan near Damietta. Not that we wish to imply that St. Francis was a lunatic, but most probably the Sultan thought that he was. But when treatment is undertaken the Oriental lunatic is by no means to be envied, and it is with a view to render his condition less miserable that the Lebanon Hospital was started. From August, 1900, to March, 1901, there were admitted 54 cases; of these 30 patients were discharged, nine being cured, four improved, 15 not improved, and two died. The remaining 24 were still under treatment. The report mentions one interesting fact. Patient No. 2 was a Sheik from the Hauran. "He has six fingers on each hand. These tribes claim to be the descendants of the giants of the old cities of Bashan." The report says nothing

as to the height of the Sheik, but polydactylism nowadays is generally associated with dwarfism. Certain passages in this report betray some *odium theologicum* which is out of place in literature dealing with scientific matters and would be better eliminated.

Parliamentary Intelligence.

HOUSE OF COMMONS.

THURSDAY, JUNE 6TH.

The Post Office and Medical Provision.

CAPTAIN NORTON asked the Secretary to the Treasury, as representing the Postmaster-General, whether he was aware that an accident happened at Mount Pleasant sorting office on May 6th to a sorter causing him to faint; that in the absence of an attendant medical officer and of an ambulance this man had to be taken in a mail van to the Royal Free Hospital, Gray's Inn-road, nearly half an hour elapsing before he was attended to; and whether the Postmaster-General, in view of this and other accidents, and seeing that over 2000 men were employed at this office, would accede to the requests of the staff for a resident medical officer and give instructions for an ambulance to be kept on the premises.—Mr. AUSTEN CHAMBERLAIN said that the accident in question, which was due to a door swinging against the man's face, was not a serious one, and there was no record that the man fainted. It was reported to have happened at 8.2 P.M., and as a cab could not be found at the minute the man was conveyed in a mail van to the Royal Free Hospital, where he arrived at 8.15 P.M. His wound was dressed and he started home in a cab at 8.30 P.M. It did not appear, therefore, that any time was lost. It was not considered necessary to have a resident medical officer at Mount Pleasant; but the question of providing an ambulance-litter (which, however, would hardly have been used on the occasion in question) was under consideration.

Coroners' Inquests (Railway Fatalities) Bill.

The order for the second reading of this Bill was discharged and the Bill was withdrawn.

FRIDAY, JUNE 7TH.

The Proposed Standard for Butter.

Mr. HANBURY, President of the Board of Agriculture, in reply to a question on this subject, said that his department have already collected a considerable body of evidence to submit to the proposed committee upon a butter standard and he hoped to nominate the committee very shortly—at any rate, during the present month.

MONDAY, JUNE 10TH.

The London Water Question.

Mr. FORDE RIDLEY asked the President of the Local Government Board whether, in the event of the purchase of the London water companies under his proposed Bill, he would take steps to prevent the continuance of the system under which an increased rent for the use of water was charged on those houses where the rates had been increased under the quinquennial re-assessments although no increased supply or any alteration whatever in the supply might have taken place.—Mr. WALTER LONG replied that he was afraid he could not give any undertaking at the present time with regard to the subject of his hon. friend's question.

TUESDAY, JUNE 11TH.

Death Certification.

Sir JOHN KENNAWAY asked the President of the Local Government Board (1) if his attention had been directed to the report of the coroner's inquest, held at Birmingham on June 3rd on the bodies of 31 infants found in a cellar at the house of Mrs. Knowles; and (2) seeing that a Select Committee reported in 1894 that the state of the law with respect to the disposal of the bodies of deceased infants and children was unsatisfactory and made recommendations in regard to its amendment, whether he could hold out hopes of introducing early legislation to deal with the abuses shown to exist.—Mr. WALTER LONG replied that the answer to the first paragraph was in the affirmative. The matter reported on by the Select Committee referred to was receiving his careful attention. He should be very glad to be able to deal with it, but he was afraid he could not hold out any expectation of legislation on the subject during the present session.

Medical Officers of Health in Scotland.

The LORD ADVOCATE, in reply to Mr. WEIR, said that there are 278 medical men holding appointments as medical officers of health in Scotland. Of these, 61 possess a diploma in sanitary science, public health, or State medicine.

Civil Surgeons at the War.

Mr. SCHWANN asked the Secretary of State for War whether he had now received any answer to his telegram to Lord Kitchener with regard to the possibility of setting free and conveying home the medical officers who volunteered for service in South Africa, many of whom had been out from home much more than a year, exposed to heavy work and risk from contagion and otherwise.—Mr. BRODRICK replied: Lord Kitchener has not yet been able to release civil medical officers apart from those whose engagements have terminated. If circumstances admit of it all possible consideration will be shown.

New Factory Legislation.

On the motion for the second reading of the Factory and Workshop Acts Amendment Bill Mr. RITCHIE, the Minister in charge of the measure, gave an account of its main provisions. He explained that the existing law in the matter of ventilation applied only to the removal of noxious gases, dust, &c. There were, however, many cases in which workers were crowded in rooms heated by means of gas-jets where the air was never practically changed, and this Bill, while not laying down the particular form of ventilation, required that there should be sufficient ventilation in all such premises. As to machinery the Bill prohibited the employment of children in cleaning beneath moving machinery. On the subject of underground bakehouses the Bill defined an underground place as a place where the floor of the room was three feet below the surface of the ground. It did not actually prohibit rooms being used for this purpose even if they were more underground than three feet, but it placed on the local authority the responsibility of seeing that where there were such places they should be sanitary and licensed accordingly. The present regulations dealing with dangerous trades were of an unsatisfactory character. There might be separate rules for each factory and workshop in the same industry even where the conditions were exactly similar. One of the worst features of the existing law was that the decision was left in the hands of an arbitrator, who had practically no responsibility, and his decision was binding on the Secretary of State. The proposal of the Bill was that rules should in the first instance be made in draft form by the Secretary of State and for the entire trade; that all parties, both employers and employed, might make representations with regard to them; and that the Secretary of State should be bound to take all objections into consideration, and might, if so advised, amend the draft rules accordingly. Before these rules became operative there would be the fullest public inquiry before an arbitrator. The Secretary of State, however, would not be bound by his decision, but would form his own judgment; and, finally, the proposed rules would be laid on the table of both Houses of Parliament. There would, therefore, be ample public inquiry and the fullest responsibility of the Secretary of State, as to which he attached the greatest importance. Further, the Bill proposed to bring laundries within the scope of the factory and workshop legislation; and with regard to fruit preserving and fish curing, while it exempted these employments with regard to the hours of labour, it brought them under the sanitary provisions.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

BERRYMAN, E. N., L.R.C.P. Lond., M.R.C.S. Eng., has been appointed Medical Officer of Health of Llandovery, South Wales.

BOULTON, ARTHUR, L.R.C.P. Lond., M.R.C.S. Eng., D.P.H., has been appointed Medical Officer of Health of Woodhall Spa, Lincolnshire.

BRAWN, H. E., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Second Assistant Medical Officer at the Marylebone Infirmary.

CLAY, T. W., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory Acts for the Holyhead District of the County of Anglesey.

DIXON, W. J., M.B., C.M. Madras, M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Resident Medical Officer at the North-West London Hospital.

DUTTON, R. C., M.B., Ch.B. Vict., has been appointed a Civil Surgeon (attached) to the forces in South Africa.

EMPSON, JOHN, M.D., C.M. Bishop's Univ. Montreal, L.R.C.P. Irel., L.R.C.S. Irel., has been appointed Certifying Surgeon under the Factory Acts for the Milborne Port District of Somerset.

ELLIOT, NORMAN B., M.D., M.R.C.P. Lond., has been appointed Physician to the National Hospital for Diseases of the Heart.

ELWORTHY, H. S., F.R.C.S. Eng., has been appointed Casualty Officer to the Great Northern Central Hospital.

FLETCHER, F. A. C., L.R.C.P., L.R.C.S. Edin., has been appointed Certifying Surgeon under the Factory Acts for the Crosshills District of the West Riding of Yorkshire.

GRIFFITH, W. S., M.B., C.M. Edin., has been appointed to the Medical Charge of Troops stationed at South Hook Fort, Milford Haven, South Wales.

HITCHENS, HAROLD JOHN, has been appointed Captain in the Army Medical Corps, Queensland Defence Force (Land) and Medical Officer in charge of the 5th Queensland Contingent (Imperial Bushmen) for South Africa.

HULBERT, E. B., M.D. Durh., has been appointed Assistant Medical Superintendent at the St. Marylebone Infirmary, vice Dr. Sinegar, resigned.

PRITCHETT, G. W., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Assistant Resident Medical Officer at the North-West London Hospital.

TAYLOR, JOHN, M.D. Aberd., has been appointed Certifying Surgeon under the Factory Acts for the Elgin District.

WARRINGTON, W. B., M.D. Lond., M.B., Ch.B. Vict., M.R.C.P. Lond., has been appointed Honorary Physician to the David Lewis Northern Hospital, Liverpool.

WILLIAMS, EGERTON H., M.R.C.S. Eng., L.R.C.P. Lond., D.P.H. Camb., M.D. Brux., has been appointed Medical Superintendent of the City Hospitals, Sheffield, vice Frank S. Hardy, resigned.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BARNWOOD HOUSE HOSPITAL FOR THE INSANE, Gloucester.—Junior Assistant Medical Officer. Salary £150 (rising to £170), with board, &c.

BIRKENHEAD UNION.—Male Assistant Medical Officer. Salary £130 per annum, with board, washing, and apartments.

BOROUGH OF BOOTLE.—Medical Officer of Health, &c. Salary £400 per annum.

BRIDGNORTH AND SOUTH SHROPSHIRE INFIRMARY.—House Surgeon. Salary £80, with board and lodging.

BRIDGWATER INFIRMARY.—House Surgeon. Salary £80 per annum, with board and residence.

BRIGHTON, HOVE, AND PRESTON DISPENSARY. — House Surgeon. Salary £160 per annum, with furnished apartments, coals, gas, and washing.

CARDIFF INFIRMARY.—Honorary Gynæcologist.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Registrar. Honorarium of 20 guineas.

CHELTENHAM GENERAL HOSPITAL.—Junior House Surgeon, unmarried. Salary £60 per annum, with board, lodging, and washing.

CHESTER GENERAL INFIRMARY.—House Physician. Salary £80 per annum, with residence and maintenance. Also House Surgeon. Salary £90 per annum, with residence and maintenance.

CHILDREN'S HOSPITAL, Sheffield (East End Branch).—Lady House Surgeon. Salary £70 per annum, with board, lodging, and washing.

CLAYTON HOSPITAL AND WAKEFIELD GENERAL DISPENSARY.—Junior House Surgeon, unmarried. Salary £80 per annum, with board, lodging, and washing.

CONSUMPTION SANATORIA FOR SCOTLAND, Bridge of Weir, Renfrewshire.—Resident Medical Officer. Salary £150, with house, board, and laundry.

COUNTY ASYLUM, Carmarthen.—Junior Assistant Medical Officer, unmarried. Salary £130, advancing £10 yearly to £150, with furnished apartments, board, washing, and attendance, without stimulants.

COUNTY ASYLUM, Prestwich, Manchester.—Assistant Medical Officer, unmarried. Salary £150, increasing to £250, with board, apartments, and washing.

COUNTY ASYLUM, Whittingham, Lancashire.—Junior Assistant Medical Officer, unmarried. Salary £150, increasing to £250, and on promotion to £300. Furnished apartments, board, washing, and attendance provided.

COUNTY BOROUGH OF BURTON-UPON-TRENT.—Medical Officer of Health and Public Analyst. Salary at rate of £350 per annum for the Medical Officership and £50 per annum for the office of Public Analyst, and authorised disbursements.

DENBIGHSHIRE INFIRMARY, Denbigh.—House Surgeon. Salary £100, with board, residence, and washing.

DEVONSHIRE HOSPITAL, Buxton, Derbyshire.—Assistant House Surgeon. Salary £50 per annum, with furnished apartments, board, and washing.

ECCLES AND PATRICROFT HOSPITAL, Patricroft.—House Surgeon. Salary £60 per annum, with board, lodging, and washing.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark-bridge-road, S.E. Senior Resident Medical Officer. Salary £70, with board and washing.

GENERAL HOSPITAL, Birmingham.—House Physician. Salary £70 per annum, with residence, board, and washing.

GREAT NORTHERN CENTRAL HOSPITAL.—Non-resident Assistant House Surgeon for six months. Salary at the rate of £30 per annum, with luncheon and dinner. Also Dental Surgeon.

GREENOCK INFIRMARY.—Assistant House Surgeon. Salary £40 per annum, with board and residence.

GUY'S HOSPITAL.—Lecturer on Biology. Also Demonstrator of Chemistry and Physics and Demonstrator of Chemistry and Toxicology.

HARTLEPOOLS HOSPITAL.—House Surgeon. Salary £100 per annum, with board, washing, and lodging.

HEREFORD COUNTY AND CITY ASYLUM.—Locum Tenens Assistant Medical Officer for 10 or 12 weeks. Salary £3 3s. per week, with board, lodging, &c., and railway fare.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House Physicians for six months, with an honorarium of £25.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—Clinical Pathologist and Bacteriologist, non-resident, honorarium 50 guineas; also Anæsthetist, honorarium 15 guineas; House Surgeon, unmarried, for six months, salary £20, washing allowance £2 10s., with board and residence; and Medical Registrar, honorarium 50 guineas.

HULL ROYAL INFIRMARY.—Junior Assistant House Surgeon. Salary £80, with board and lodging.

HULME DISPENSARY, Manchester.—Honorary Physician and also Honorary Surgeon.

INFIRMARY, Cambridge-road, S.E.—First Assistant Medical Officer, single. Salary £150 per annum, with board, lodging, and washing.

INFIRMARY, Fulham-road, S.W.—Second Assistant Medical Officer. Salary £70, with board, residence, and washing.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN, 8, Hunter-street, Brunswick-square, W.C.—Demonstrator of Chemistry and Physiology.

NORFOLK AND NORWICH HOSPITAL.—Assistant House Surgeon for six months. Honorarium £20, with board, lodging, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Senior Resident Surgeon. Salary £200 per annum, increasing by £15 every year. Also two Assistant Resident Surgeons. Salaries £160 per annum each, increasing by £10 every year, furnished apartments, attendance, light, and fuel. Unmarried.

OWENS COLLEGE, Manchester.—Senior Demonstrator in Physiology. Stipend £150, rising to £200.

PETERBOROUGH INFIRMARY.—House Surgeon. Salary £80 per annum, with board and residence.

ROYAL ALBERT HOSPITAL, Devonport.—Assistant House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

ROYAL CORNWALL INFIRMARY.—House Surgeon, unmarried. Salary £100, increasing by £10 a year, with board (excluding stimulants) and apartments.

ROYAL EDINBURGH ASYLUM.—Assistant Medical Officer. Also Clinical Assistant for three months.

ROYAL SEA-BATHING HOSPITAL, Margate.—Assistant Resident Surgeon. Salary £60, with board and residence.

SALFORD UNION.—Resident Medical Officer. Salary £150 per annum, with furnished apartments and attendance.

TOTTENHAM HOSPITAL, N.—House Surgeon. Salary £50 per annum, with board, residence, and laundry.

UNIVERSITY COLLEGE, Sheffield.—Professorship of Anatomy.

UNIVERSITY OF BIRMINGHAM.—Assistant Lecturer and Demonstrator of Pathology and Bacteriology.

WEST BROMWICH UNION.—Assistant Workhouse Medical Officer. Salary £125 per annum, and £100 per annum in lieu of apartments, board, &c.

WESTERN GENERAL DISPENSARY, Marylebone-road.—Senior House Surgeon, unmarried. Salary £100 a year, with board, residence, and washing.

WESTON-SUPER-MARE HOSPITAL AND DISPENSARY.—Medical Officer. Salary £100 per annum, with board, lodging, and washing.

WORKSOP DISPENSARY AND VICTORIA HOSPITAL.—House Surgeon and Dispenser, unmarried. Salary £150 per annum, rooms, and attendance.

YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary £110 a year, with board, lodging, and attendance.

THE CHIEF INSPECTOR OF FACTORIES gives notice of Vacancies for Certifying Surgeons under the Factory Act's at Newry, in the County of Down, and at Turvey, in the County of Bedford. Application to be made to the Factory Department, Home Office.

Births, Marriages, and Deaths.

BIRTHS.

AHRENS.—On June 5th, at Worting-road, Basingstoke, the wife of H. A. Ahrens, M.R.C.S., L.R.C.P., of a son.

BARTON.—On June 9th, at the Rowans, Lingfield-road, Wimbledon, the wife of P. Frederic Barton, M.A., M.B., B.C., of a son.

BIRD.—On June 10th, at King-street, Bridgwater, the wife of G. W. Harvey Bird, M.A., M.B., B.C. Cantab., M.R.C.S., L.R.C.P., of a daughter.

DOWDEN.—On June 6th, at Kingston, Jamaica, the wife of Richard Dowden, M.D., of a daughter.

MCBRIDE.—On June 3rd, at The Laurels, Berkhamsted, Herts, the wife of J. Best McBride, L.R.C.P., L.R.C.S. Irel., of a daughter.

PARSONS.—On May 25th, at Kaiapoi, New Zealand, the wife of H. Compton Parsons, M.R.C.S. Eng., L.R.C.P. Lond., of a daughter.

PAKES.—On June 9th, the wife of Walter C. C. Pakes, D.P.H., &c., of a son.

MARRIAGES.

DUNN—ROTHERFORD.—On June 6th, at St. Martin's Church, Scarborough, by the Rev. Robert Pemberton, M.A., Robert Ayton Dunn, M.D., to Eleanor Rotherford, daughter of the late John Rotherford.

EDWARDS—YATES.—On June 12th, at the Congregational Church, Yeovil, by the Rev. A. J. Viner of Oldham, Edward Edwards, L.R.C.P., L.R.C.S., &c., of Oldham, to Hannah Lees Ainsworth, daughter of James Yates, M.D., J.P., Pitt Bank, Oldham.

MOSS-BLUNDELL—CLARK.—On June 5th, at the Presbyterian Church, Cricklewood, by the Rev. J. Monro Gibson, D.D., Cuthbert Blundell Moss-Blundell, M.R.C.S., L.R.C.P., of 51, Moffatt-road, Thornton Heath, eldest son of F. B. Moss-Blundell, Esq., of Hampton-on-Thames, to Agnes, third daughter of the late Captain Thomas Clark, of Irvine, N.B., and Mrs. Clark, of 93, Fordwych-road, Brondesbury, N.W.

MOUNSEY—BRIGHT.—On June 4th, at St. John's Church, Upper Norwood, by the Rev. W. H. Bolton, Ridley Ewart Mounsey, M.R.C.S., L.R.C.P., to May, daughter of Alfred Bright.

TOLPUTT—WILLOWS.—On June 6th, at All Saints', Rushton, by the Rev. C. M. Wetherall, Arnold George Tolputt, M.R.C.S. Eng., L.R.C.P. Lond., to Alice Ada, daughter of J. G. Willows.

WALLACE—DAY.—On June 5th, at the parish church, Cockington, S. Devon, by the Rev. J. Henning Robert Fitzhenry Stanley Wallace, M.R.C.S., L.R.C.P., to Marion, daughter of J. C. N. Day.

WATKINS—SMITH.—On 5th June, at St. Peter's Church, Newton-le-Willows, by the Rev. Alan P. Watkins, M.A., brother of the bridegroom, assisted by the Rev. James Ryder, vicar of the parish, Harold Ernest, third son of John W. Watkins, M.D., of Newton-le-Willows, to Lilias Josephine, youngest daughter of the late James Smith, J.P., and of Mrs. Smith, of Brookside, Newton-le-Willows.

DEATHS.

BLAND.—On June 4th, at Arranmore, Carew-road, Eastbourne, William Charles Bland, M.R.C.S., L.R.C.P., late of Milton, Portsmouth, aged 53 years.

BOND.—On June 6th, at the Sanctuary, Westminster, Thomas Bond, F.R.C.S., M.B. and B.S. Univ. Lond., aged 69 years.

BOOTH.—On May 31st, at Wandsworth, Edward Johnson Hardy Booth, M.R.C.S., L.S.A., of Huddersfield, in his 55th year.

CLARK.—On June 5th, at North Sydney, N.S.W., Charles Alfred Dagnall Clark, M.B. Lond., aged 45 years.

DUNBAR.—On June 6th, at North-side, Clapham-common, James Alexander Dunbar, M.D., Inspector General of Hospitals, Bengal Army, in his 86th year.

HARRATT.—On April 5th, at Monte Video, South America, Henry Harratt, of Eunside, Northiam, Sussex, M.R.C.S. Lond., M.R.C.P. Edin.

MELVILLE.—On June 8th, at Knockawn, Portlaw, Alexander G. Melville, M.D., M.R.C.S., late Professor, Queen's College, Galway, aged 82 years.

ROBERTSON.—On May 23rd, at Glanton House, Northumberland, William Robertson, M.D. Edin., in his 80th year.

WARRINGTON.—On the 7th of June, at Bradshaw House, Congleton, Cheshire, Francis William Warrington, M.D., J.P., aged 62 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

A WICKED ADVERTISEMENT.

WE have for long advocated that some check should be placed upon the pernicious advertisements of quacks and of quack medicines as appearing in the daily and weekly press, but, excepting possibly some of the effusions of abortion-mongers, we think that we have never seen a more wicked and disgraceful advertisement than the following which appeared in the *Daily Express* of June 6th. It is headed, "Awful Increase in Heart Disease—Have you the Symptoms?"

* * * * * * *

Almost one half the people have heart disease. The trouble is they don't know it. ..... It is no exaggeration to say that thousands of deaths might have been avoided had the victim known about our Heart Tablets. Pain is not the only symptom. Don't drop dead. ..... Sure signs of a diseased heart that cannot be mistaken are palpitation or fluttering, skipping a beat, dark specks in the vision, swelled feet or ankles (a positive sign), desire to sleep after eating, unnaturally cold hands and feet, tenderness, numbness, hungry or weak spells, painful to lay (*sic*) on left side, dropsy, neuralgia round the heart. If you have any of these symptoms don't delay a moment but write us at once. Relief is at hand. Read what others say about Oxien.

We have no hesitation in describing this advertisement as simply wicked, and we are surprised that any British journal can print such lies. The whole set of symptoms, although undoubtedly they can exist in patients suffering from heart disease, are in 999 cases out of 1000 simply due to chronic dyspepsia. When we add that the advertisement is adorned with a picture of a woman staggering away from a telephone through which she has just heard the message, "Your husband just died of heart disease," we have said enough to show that this advertisement practically seeks to get money by wickedly and basely playing upon fears which have no foundation. The advertisement emanates from Maine in the United States so the law cannot touch it, but surely such lies should not be permitted to appear in the press of this country.

HONORARY HOSPITAL APPOINTMENTS.

A SHORT time ago the governors of the Derby Royal Infirmary altered their rules and appointed an elective committee for the purpose of filling up vacancies in the honorary appointments. At an extraordinary meeting of the governors and subscribers of the Royal Albert Edward Infirmary, Wigan, on the 4th inst., the following alterations of rule was passed without dissent:—

Each honorary medical officer shall be elected by an elective committee which shall be appointed at each annual meeting and shall consist of the board of management and five members elected by the subscribers of the Hospital Saturday and Sunday Fund at their annual meeting.

The chairman of the board of management stated that this had received careful consideration at the hands of the board and he moved its adoption, with some alterations in other rules, which also had been considered carefully before submitting them to the subscribers. After the last election of a honorary medical officer the medical board strongly recommended a change in the method of election, and it is satisfactory to find the change readily accepted at the first opportunity by the subscribers. The medical board has four representatives out of six members on the board of management, and the senior honorary medical officer (Mr. Berry) was chairman during the past year and was again re-elected for the ensuing year at the first meeting of the new board appointed at the annual meeting.

ASTHMA AND GOUTY NEPHRITIS.

To the Editors of THE LANCET.

SIRS,—In reply to "General Practitioner's" query in THE LANCET of June 1st, p. 1582, about attacks of asthma coming on in the small hours of the morning in a subject of Bright's disease, I should say that the time of onset strongly suggests flatulent dyspepsia as the cause. I should treat him by light but solid food, restriction of fluids with meals, especially towards the end of the day, and the administration of a mixture of bicarbonate and sulphocarbolate of soda with ammonia, nux vomica, peppermint, and chloroform water at bedtime and on the occurrence of an attack.

I am, Sirs, yours faithfully,

June 10th, 1901. S. L. B. W.

UNSOUND MEAT—HEAVY AMERCEMENT.

AT the Clerkenwell Police-court on June 10th William Kendall, butcher and sausage-maker, Chapel-street, Finsbury, was amerced in a penalty of £50 and £5 5s. costs for having for sale on his premises 96 pounds of unsound and unwholesome meat and sausages. Mr. Newman, medical officer of health, deposed that he inspected the meat and found it totally unfit to be consumed as human food.

WANTED—A HOME FOR EPILEPTICS.

To the Editors of THE LANCET.

SIRS,—I should deem it a favour if any of your readers could inform me of a home or institution for epileptics. As medical officer of a small workhouse I have as patients two girls, about 16 years of age, and as we have neither proper attendants nor facilities for treating such cases I should like to try to get them into some suitable home. I have no doubt that my Board would agree to pay a reasonable sum for their maintainance.

I am, Sirs, yours faithfully,

June 10th, 1901. BROMIDE.

WANTED—A HOME FOR THE TREATMENT OF INEBRIETY.

A MEDICAL MAN writes: "I shall be glad if you can put me into communication with the manager of any institute for the treatment of inebriety who would take a young man able to pay only a guinea or 25s. a week for the accommodation." Any stamped replies received at THE LANCET Office will be forwarded to the writer.

THE SWALLOWING OF FOREIGN BODIES.

IN the June number of the *Phonographic Record* Dr. James Adams gives some instances of what he calls "accidental cures"—cases in which, for instance, a goitre disappeared after a blow or a hernia was cured by continued jolting. He concludes his paper with an instance of death resulting from a supposed accident. He says: "A well-known gentleman in a large Scottish town awoke one morning with abdominal pain. He missed his false teeth from his mouth. He was taken to hospital, abdominal section was done, and his teeth were not found. He was sewn up again. They were found under his pillow. He died. I told this story to two medical friends, both well known and of large experience. To my surprise each of them had had patients complaining of having swallowed false teeth without remembering it. In each case the patient was told to go home and look for them. In one case they were found after two days' search behind a picture where they had been put by a servant; in the other a shorter search sufficed. The moral is that when a patient swallows his false teeth he knows it and does not infer it from symptoms." The moral, of course, applies to other articles as well as false teeth. Most medical men who have had much experience in large general hospitals must be familiar with similar cases, and more especially as regards children whose mothers, having lost the bone connexion between the ring and the test of the so-called "comforters," immediately infer that it has been swallowed. Directions to search for the foreign body at home generally saves the child from unnecessary surgical interference.

"THE CASE OF MR. LOUIS FERDINAND DODS—AN APPEAL."

THE following further subscriptions have been received:—

	£	s.	d.		£	s.	d.
Dr. Cautley	2	2	0	Mr. H. T. Butlin	1	1	0
Dr. P. H. Byrne	1	1	0	Lieutenant-Colonel W. Coates, I.M.S.	2	2	0
Mr. G. E. Norton ...	2	2	0	Dr. W. S. A. Griffith ...	3	3	0
Mr. Wm. Rayner ...	5	5	0				

THE ANGLO-AMERICAN NURSING HOME AT ROME.

THE above-mentioned institution was opened in November, 1900. Its object is to provide comfortable rooms with the best of trained nurses for the sick, and it also possesses a staff of trained nurses who are sent out to private cases throughout Italy. To be taken ill in a hotel anywhere is unpleasant, and, more especially on the Continent, is apt to lead to various difficulties, while if the illness be of an infectious nature there is scarcely any place for the foreigner other than the public hospital. The Anglo-American Nursing Home is an attempt to provide British and American travellers who should fall ill with, so far as is possible, the same attention as that which they would meet with at home. The institution was opened at a cost of £2300, of which £1505 remain to be paid, and with a view to liquidating this debt a concert is to be held at Stratford House, Stratford-place, W., by the kind permission of Mr. Murray Guthrie, on June 19th, at 3.30 P.M. The concert is under the most distinguished patronage and the artistes are: Madame Eldee, Miss Marie Brema, Mr. David Bispham, Mr. James McInnes, Mr. W. H. Squire, Signor Valero, Madame Liza Lehmann, Mr. Herz, Mrs. Gordon Woodhouse, Monsieur Bucheit, and the Countess Valda Gleichen. Any other information may be obtained from the secretaries, Mrs. Robert Crawshay, 35, North Audley-street, and Colonel Needham Charles, 59, Lowndes-square. We may add that ever since the opening the rooms have been in constant occupation and that nurses have been sent out to 42 cases in Rome, Florence, Naples, and Sicily. A certain number of beds are free to British and American born subjects whose lack of means precludes their paying the fees.

H. K. S.—Diseases of the Throat, Nose, and Ear. By P. McBride, M.D., F.R.C.P. Edin. Young J. Pentland, London and Edinburgh. 1894. A Treatise on Diseases of the Ear. By T. Mark Hovell, F.R.C.S. Edin. London: J. and A. Churchill. 1894. Price 18s. Diseases of the Ear. By Edward B. Dench, Ph.B., M.D. London: Henry Kimpton and Hirschfield Bros. 1895. Price 21s.

A Volunteer Medical Officer would be glad to know who is the proper person for arranging for the attendance of the medical officers of the

corps at camp. Does it rest with the commanding officer, adjutant, or the senior medical officer, and what is the correct way of going about it?

ERRATUM.—We regret that in the account of the Islington Medical Society's Jubilee dinner which appeared in our issue of June 8th, on page 1614, the age of Mr. J. T. Jackson, the one surviving original member, was wrongly given as 87. It should have been given as 89.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, June 13th, 1901.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
June 7	30·29	E.	...	112	70	49	53	59	Cloudy
,, 8	30·12	E.	...	112	73	50	54	60	Cloudy
,, 9	30·07	S.E.	...	120	82	56	57	66	Fine
,, 10	29·95	N.E.	...	118	73	57	56	62	Cloudy
,, 11	29·95	WNW	...	118	73	51	53	61	Cloudy
,, 12	29·88	W.	...	94	63	53	53	59	Overcast
,, 13	29·61	W.	0·11	102	59	45	47	53	Cloudy

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (17th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (18th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

WEDNESDAY (19th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.).

THURSDAY (20th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

FRIDAY (21st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

SATURDAY (22nd).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

FRIDAY (21st).—WEST LONDON MEDICO-CHIRURGICAL SOCIETY (Hammersmith Town Hall).—Sir R. D. Powell: Acute Cardiac Failure. (Cavendish Lecture).

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (17th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. F. Payne: Consultation. (Skin.)

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. H. P. Dunn: Ocular Pain, its Varieties, Significance, and Treatment.

TUESDAY (18th).—ROYAL COLLEGE OF PHYSICIANS OF LONDON.—5 P.M. Dr. Halliburton: The Chemical Side of Nervous Activity.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Sir Wm. Broadbent: Consultation. (Medical.)

WEDNESDAY (19th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Smith: Consultation. (Surgical.)

LONDON HOSPITAL MEDICAL COLLEGE (Anatomical Theatre of the College). — 4 P.M. Mr. Jonathan Hutchinson: Raynaud's Phenomena.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. Schorstein: Congenital Heart Disease.

THURSDAY (20th).—ROYAL COLLEGE OF PHYSICIANS OF LONDON.—5 P.M. Dr. Halliburton: The Chemical Side of Nervous Activity.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Consultation. (Surgical.)

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Dr. Voelcker: Diphtheritic Paralysis, its Recognition and Treatment.

CHARING-CROSS HOSPITAL.—4 P.M. Dr. Eden: Demonstration of Gynæcological Cases. (Post-Graduate Course.)

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. Moullin: Backward Displacement of the Uterus.

FRIDAY (21st).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. T. Collins: Consultation. (Eye.)

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used

MANAGER'S NOTICES.

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WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

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Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, MR. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and agents are authorised to collect, and do so collect, from the Proprietors the cost of such extra postage.

During the week marked copies of the following newspapers have been received:—*Hertfordshire Mercury, Reading Mercury, Windsor and Eton Express, City Press, Mining Journal, Bristol Evening News, Local Government Journal, Surrey Advertiser, Sunday Times Liverpool Daily Post, Yorkshire Post, Bristol Mercury, Harrogate Herald, Weekly Free Press (Aberdeen), Dumfries and Galloway Courier and Herald, Scranton Republican*, &c., &c.

Communications, Letters, &c., have been received from—

A.—Messrs. Allen and Hanburys, Lond.; Messrs. Arnold and Sons, Lond.; Anglo-American and Continental Pharmaceutical Co., Croydon; A. C.; Mr. C. M. Atkinson, Ashford.

B.—Mr. T. H. Brocklehurst, Steeple Claydon; Messrs. Brady and Martin, Newcastle-on-Tyne; Messrs. Baird Bros., Glasgow; C. Birchall, Ltd., Liverpool; Birkenhead Union, Clerk of; Messrs. Burroughs, Wellcome, and Co., Lond.; Messrs. Boulton and Paul, Norwich; Burton-on-Trent Corporation, Clerk of; Mr. R. Barton-Wright, Lond.; Dr. S. S. Burt, New York; Dr. A. Brocchi, Plombières; Mr. Ball, Lond.; Mons. O. Berthier, Paris; Mr. J. R. Bentley, Reading; Mr. A. S. Barling, Lancaster.

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K.—Kidder Manufacturing Co., New York.

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